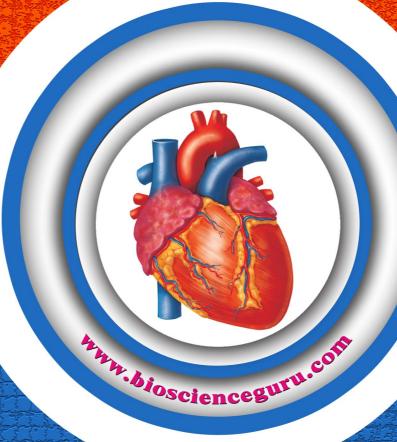


10th Class Biological Science Question Bank

(C.C.E. MODEL)





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PREFACE

The biology text book is designed as per the CCE based themes where the students have to perceive the concepts of biology in an aggregate manner. The students may face many discomforts to answer the questions in CCE based method. The evaluation part of the lessons is designed as such to meet the competencies of biology. At this circumstance we the teachers of West Godavari District have taken initiation to provide the study material for X class biology.

Salient features

- 1. Prepared as per all type of CCE pattern questions
- 2. Selected textual questions and answers were given in a simple manner
- 3. Questions on diagrams
- 4. Questions on experiment based diagrams
- 5. Questions on information skill
- 6. CCE pattern bits
- 7. Questions and bits on environmental studies

It serves as a good guide to all grades of students. It provides analytical answers which can be accepted by all without any controversy. It is prepared by us after a detailed discussion among our teachers.

At this, we would like to thank our admin of **Scienceguru**, Sri. D. Murali garu for his support. We also convey our thanks to **Sri. N. Ramana Reddy** garu from Prakasam dist for providing the multiple choice questions. We hope that this material is going to be accepted and honored by you all.

Thanking you

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We have taken all efforts to present this book without errors. But some errors might have crept in . We don't have any legal responsibility for such error and omissions. If you bring them to our notice we will correct them.

Bioscience guru

1. NUTRITION

I. MARK QUESTIONS:

1. What is Nutrition?

It is the process by which the organism ingests digests, absorbs transports and disposes the end products.

2. What is Saprophytic Nutrition?

It is a type of nutrition in which organisms obtain their food from dead plants and animals. The organisms which lead Saprophytic Nutrition are called saprophytes. Ex: Mushrooms, Bacteria, Fungi.

3. What is parasitic Nutrition?

It is a type of Nutrition in which organisms get their food from the body of other living organisms. The organisms which lead parasitic nutrition are called parasites. Ex: Cuscuta, lice, leeches.

4. What is Grana?

The Stacked like structures formed by the third layer of chloroplast are called Grana.

5. What is Stroma?

The Fluid filled portion of the chloroplast is called Stroma.

6. What is Photolysis of Water?

Splitting of water molecule by chlorophyll into H⁺, OH⁻ ions is called photolysis of Water.

7. What are Guard Cells?

The two Kidney Shaped Cells which surrounds the stomata are called Guard Cells.

8. Why Choloroplasts are green in colour?

Chloroplasts are green in colour due to presence of green coloured pigment called Chlorophyll.

9. What is the connecting substance between light reaction and dark reaction?

NADPH₂ is the connecting substance between light reaction and dark reaction.

10. Name the three end products of photosynthesis?

Glucose, oxygen and water are the three end products of photosynthesis.

11. What is Chyme?

The partially digested food in the stomach is called Chyme.

12. What is Emulsification?

Conversion of fats into Globule like forms by the bile juice is called Emulsification.

13. What is balanced Diet?

Diet containing nutrients in required amounts is known as balanced Diet.

14. What are different types of malnutrition?

There are three types of malnutrition. They are 1. Calorie malnutrition, 2. Protien malnutrition 3. Protein -calorie malnutrition.

15. Name the enzymes which act on carbohydrates?

Ptylin, Amylase

16. Name the enzymes which act on proteins?

Pepsin, Trypsin

17. Name the enzymes which act on Fats?

Lipase

18. What is called Ingestion?

The process of taking food into the body is called Ingestion.

19. What is called digestion?

The process of breaking down of complex food material into simple one is called Digestion.

20. What is absorption?

The process by which digested food enters into blood is called absorption.

21. What is called defecation?

The process of undigested food passes out of the body through anus is called defecation.

22. What is the correct order of steps occurring in nutrition in animals? Ingestion -> Digestion -> Absorption -> Assimilation -> Egestion.

2 MARK QUESTIONS:

1. Write the differences between autotrophic nutrition and heterotrophic nutrition?

Autotrophic nutrition	Heterotrophic nutrition
1.The organism prepare its own food	1.The organism doesn't prepare its own food
2.Food is prepared from CO ₂ , water, and sunlight	2.Food can't be prepared from CO ₂ , water, and sunlight
3.Ex: Green plants	3.Ex: Animals

2. Write the differences between light reaction and dark reaction

Light reaction	Dark reaction
1.Occurs in the grana of the	1.Occurs in the stroma of the
chloroplast	chloroplast
2.Occurs only in the presence of light	2. It is not dependent on light
3.End products are O_2 , ATP, and	3.End product is Glucose
NADPH	achers blogs

- 3. Why photosynthesis is considered as the basic energy source for most of living world? All living things constantly need energy to be alive. They get the energy in the form of food. The food directly or indirectly comes from the green plants through photosynthesis. Hence photosynthesis is considered as the basic energy source for most of living world.
- 4. Why is better to call the dark phase of photosynthesis as a light independent phase? The Dark reaction does not depend on light. It occurs in night and day time also. Hence it is better to call the dark phase of photosynthesis as a light independent phase.
- 5. Why is it necessary to destarch a plant before performing any experiment of photosynthesis?

It is necessary to destarch a plant before performing any experiment on photosynthesis because if starch is present it may interfere with the result of the experiment.

- 6. Why is it not possible to demonstrate respiration in green plant kept in sunlight? If sunlight is present the CO₂ which is produced in respiration will be used in photosynthesis. So it is not possible to demonstrate respiration in green plant kept in sunlight.
- 7. What is the role of acid in stomach?
 - 1. HCL is released in stomach
 - 2. It kills harmful germs of the food
 - 3. It creates an acidic medium, which facilitates the action of pepsin.

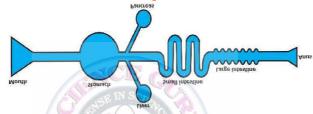
- 8. What is the role of roughages in the alimentary canal?
 - 1. Roughages are the fibers of carbohydrates or proteins
 - 2. They clean the alimentary canal
 - 3. They avoid constipation.
- 9. If we keep on increasing CO₂ concentration in the air what will be the rate of photosynthesis?

The rate of photosynthesis increases up to a certain concentration of CO_2 . After that there will be no increase in the rate of photosynthesis.

10. What happens to plants if the rate of respiration becomes more than the rate of photosynthesis?

If the rate of respiration becomes more than the rate of photosynthesis, the plant is starved due to the lack of food. It gets etiolated and finally it leads to the death.

- 11. If there were no green plants, all life on the earth would come to an end! Comment If there were no green plants on the earth, there will be no food and oxygen. Finally there will be no life on the earth.
- 12. Raheem prepared a model showing the passage of the food through different parts of the elementary canal? Observe this and label its parts.



4 MARK QUESTIONS:

1. With the help of chemical equation explain the process of photosynthesis in detail Equation:

$$6\text{CO}_2 + 12\text{H}_2\text{O}$$

light energy

Chlorophyll

 $C_6H_{12}O_6 + 6H_2O + 6O_2$

3

Photosynthesis: It is a photochemical reaction. It occurs in the chloroplasts, in the presence of light. During this process carbohydrates and oxygen are formed.

Requirements: CO₂, Water, Light and chlorophyll.

End products: Glucose, oxygen, water process. Photosynthesis occurs in two stages. They are 1. Light reaction, 2. Dark reaction

a. Light reaction: It occurs in the presence of the light in the grana of chloroplast with the help of light energy water molecule is divided into two ions named H⁺, OH⁻. This reaction is known as photolysis and also called as Hill reaction.

$$H_2O \rightarrow H^+ + OH^-$$

The OH⁻ ions, through a series of steps produce water (H_2O) and oxygen (O_2) . H⁺ ions undergo series of changes in dark reaction.

- b. Dark reaction: It is light independent reaction the H^+ ions which are produced in light reaction picked up by NADP and formed as NADPH. The H^+ ion of the NADPH combine with CO_2 and produce glucose ($C_6H_{12}O_6$).
- **2.** What is malnutrition explain some nutrition deficiency diseases.

Eating of food that does not have one or more than one nutrients in required amount is known as mal nutrition.

Malnutrition diseases: 1. Kwashiorkor 2. Marasmus

- **1.** Kwashiorkor disease:
 - 1. This is due to protein deficiency in diet.
 - 2. Body parts become swollen due to accumulation of water in the intercellular spaces.
 - 3. Very poor muscle development.
 - 4. They have swollen legs and fluffy face.
 - 5. They difficult to eat.
 - 6. They often suffer from diarrhea
 - 7. They have dry skin.

2. Marasmus:

- 1. This is due to deficiency of both proteins and calories.
- 2. Generally this disease occurs when there is an immediate second pregnancy or repeated child births.
- 3. They are Lean and week.
- 4. They have swelling limbs, less developed muscles.
- 5. They often suffer from diarrhea.
- 6. They have dry skin.

3. What process you follow in your laboratory to study the presence of starch in leaves?

Aim: to prove the presence of starch in leaves

Apparatus: potted plant, beaker, burner, tripod stand, ethanol, asbestos gauge, petri dish, iodine solution.

Procedure:

- 1. Take a leaf of potted plant.
- 2. Boil the leaf in the methylated spirit or ethanol over a water bath till it becomes pale white due to the removal of chlorophyll.
- 3. Spread the leaf in a dish and add a few drops of tincture iodine solution on it.

Observation:

1. The presence of starch will be indicated by a blue-black color

Result: during the process of photosynthesis carbohydrates are synthesized in leaves.



4. How would you demonstrate that green plants release oxygen when exposed to light?

Aim: To prove that oxygen is produced during photosynthesis.

Apparatus: Beaker with water, test tube, funnel, hydrilla twigs, glowing splitter.

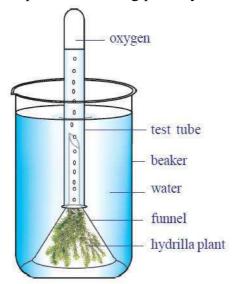
Procedure:

- 1. Place some hydrilla plants in a funnel and keep it upside down in the water of beaker.
- 2. Invert a test tube full of water over the stem of funnel.
- 3. Ensure that the level of water in the beaker is above the level of stem of the funnel.
- 4. Place the apparatus in the sunlight for 3 days.
- 5. After some time the gas bubbles come from the hydrilla plant. These bubbles are collected at the top of the test tube.

6. After sufficient gas is collected test tube is taken out of the beaker carefully by closing it with thumb.

Observations: When the glowing incense stick was kept in the test tube, it burst into flames.

Result: This shows that oxygen is produced during photosynthesis.



5. How would you demonstrate that CO₂ is essential for photosynthesis (or) write the Mohl's half leaf experiment.



Aim: To prove that carbon dioxide is essential for photosynthesis.

Apparatus: Wide mouthed bottle, KOH solution, potted plant, spilt cork, iodine solution. Procedure:

- 1. Take a potted plant and keep it in the dark nearly a week for the removal of starch.
- 2. Take a wide mouthed transparent bottle.
- 3. Put KOH solution in the bottle. The KOH absorbs carbon dioxide in the bottle.
- 4. Insert one of the leaves through a split cork into the transparent bottle containing KOH solution.
- 5. Leave the plant in sunlight.
- 6. After a few hours test this leaf and other leaf of this plant for starch.

Observation:

- 1. The part of the leaf outside the bottle turns blue-black because starch is formed in that part.
- 2. The part of the leaf inside the bottle does not turn blue-black because the carbon dioxide is absorbed by KOH solution.

Result: It proves that carbon dioxide is necessary for photosynthesis.

- **6.** Almost all the living world depends on plants for food material. How do you appreciate the process of making food by the green plants?
 - 1. Only the plants can prepare their food by own.
 - 2. Plants produce carbohydrates and oxygen through photosynthesis.
 - 3. Photosynthesis is a photo chemical reaction.
 - 4. It occurs in the chloroplasts in the presence of light.
 - 5. During this process carbohydrates and oxygen are formed.
 - 6. In this process CO₂, Water and light are participated.
 - 7. So we can say that if there is no photosynthesis there is no life.
- 7. What food habits you are going to follow after reading this chapter? Why?

To avoid indigestion of food, and to become healthy, I would follow these food habits.

- 1. I eat simple and well balanced diet
- 2. I take food in leisurely manner.
- 3. I thoroughly masticate the food.
- 4. I drink plenty of water.
- 5. I eat high fiber food.
- 6. I avoid junk food.
- 7. I don't encourage over eating.
- 8. I eat fruits and vegetables.
- 9. I follow one particular time for meals
- **8.** Observe the Diagram and answer the questions?
 - 1. Who conducted this experiment for the first time? Joseph Priestly.
 - 2. What happened to the burning candle and a mouse in a closed bell jar?

 Candle burning soon gets extinguished and mouse would soon Suffocate.



- 3. What was the observation when a candle, a mouse and a mint plant were placed inside a closed bell jar?
 - By combustion process candle releases carbon dioxide. In respiration process rat also releases carbon dioxide. In Photosynthesis mint plant uses this carbon dioxide and release oxygen. This oxygen will be used by rat to stay alive and for the candle to burn.
- **4.** What can be concluded from the above experiment? Plants restore to air what breathing animals and burning candles remove.
- **9.** Observe the Diagram and answer the questions?
 - 1. What is the aim of this experiment?

 To prove that carbon dioxide is essential for Photosynthesis.
 - 2. What are the materials used in this experiment? Wide mouthed bottle, KOH solution, pottet plant, Vertically split cork, Iodine solution, vax.
 - 3. What is the chemical used in this bottle?
 Why do we use it so?
 KOH solution, it is used to absorb carbon dioxide
 Present in the bottle.
 - 4. After iodine test which part of the leaf turns blue-black? & why?



The part of leaf inside the bottle turns to blue-black because starch is formed in that part due to Photosynthesis.

- 5. What is the inference you draw from the above experiment? Carbon dioxide is essential for Photosynthesis.
- 6. Why do we need to destarch the plant? How to destarch the plant?

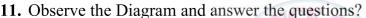
If starch present it may interfere with the result of the experiment.

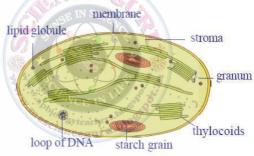
10. Observe the Diagram and answer the questions?

- 1. What is the aim of the experiment?

 To prove that oxygen is produced during Photosynthesis.
- 2. What precautions to be taken while doing this experiment?
 - a) Ensure that the level of water in the beaker is above the level of stem of the inverted funnel
 - **b)** Care should be taken while removing the test tube from the stem of the funnel.
- **3.** What is the gas accumulated in the test tube? Oxygen.
- 4. How do you test the accumulated gas and interpret it?

 Test the gas in the test-tube by inserting a glowing incense stick which would burst into flames. This shows the presence of oxygen.

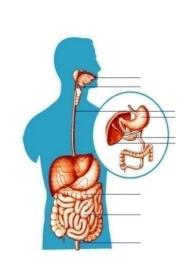




- 1. Name the diagram and label the parts. Chloroplast.
- 2. Explain the structure of this diagram? The chloroplasts consists of 3 membranes. The 3rd membrane forms stacked like structures called granum. It is the site of trapping solar energy. The intermediary fluid filled portion is called stroma. Glucose is synthesized in stroma and turn as starch.
- 3. Where are these organells found? In leaves of green plants.
- 4. What is the main function of this structure? To carry out the process of photosynthesis.

12. Observe the Diagram and answer the questions?

- 1. Name the diagram and label the parts
 Alimentary Canal in man, parts from top 1. Mouth,
 - 2. Buccal cavity, 3.oesophagous, 4. Stomach,
 - 5.pancreas, 6.liver, 7.large intestine, 8.small intestine,
 - 9. Rectum, 10.anus
- 2. What is the main function of this organ system? Digestion of food material.
- 3. Name the life process that take place in this organ system. Nutrition.



4. Draw the flow chart showing the different parts of this diagram

 $Food \longrightarrow Mouth \longrightarrow Buccal \ cavity \longrightarrow Pharynx \longrightarrow Oesophagus \longrightarrow \ Stomach$

Liver

Anus - Rectum - Large intestine - Small intestin - Duodenum

Pancreas

13. Observe the diagram and answer the questions?

- 1. What does this diagram indicate? Peristalitic movement.
- 2. Name the part of elementary canal in this diagram. Oesophagus.
- 3. Which muscles are responsible for such movement?

 Longitudinal and circular muscles present in the wall of the oesophagus.
- 4. Oesophagus is a part of which system? Digestive system.

14. Study the table and answer the questions

Enzyme	Secreted by	Secreted into	Digestive juice	Acts on	Products
Pepsin	Gastric glands	Stomach	Gastric juice	Proteins	Peptones
Bile(no enzymes)	Liver	Duodenum	Bile juice	Fats	Emulsificatio n
Amylase	Pancreas	Duodenum	Pancreatic juice	Carbohydrate s	Maltose
Lipase	Pancreas	Duodenum	Pancreatic juice	Fats	Fatty acids
Sucrase	Intestinal gland	Small intestine	Intestinal juice	Sucrose	Glucose

1. Name the enzymes which act on carbohydrates?

Amylase, Sucrase.

- 2. The enzyme that act on proteins? Pepsin.
- 3. Which juice contains no enzymes? Bile juice.
- 4. What are the end products of the fats? Fatty acids, and Glycerol.

15. Study the table and answer the questions

Vitamin	Resources	Deficiency	Symptoms
		disease	
Cyanacobalamine	Synthesized by bacteria present	Pernicious	Lean and weak, less
(B12)	in the intestine	anemia	appetite.

		•	
Retinol(A)	Leafy vegetables, carrot,	Eye and	Night blindness,
	papaya,	Skin	xeropthalmia,
	meat, fish, liver	diseases	cornea failure, scaly
			skin.
Calci ferol(D)	Liver, egg, butter, cod liver oil,	Rickets	Improper formation
	shark liver oil, morning sun		of bones, knock
	rays		knees, etc.
Tocoferol(E)	Fruits, vegetables, sprouts,	Fertility	Sterility in males,
	meat, egg, sunflower oil	disorder	abortions in females

- 1. Name the resource from which we get Cyanacobalamine(B12)? Bacteria present in the intestine.
- 2. Write the symptoms of Vitamin'A' deficiency deseases? Night blindness, xeropthalmia, cornea failure, scaly skin.
- 3. Chemical name of Vitamin'D'? Calci ferol.
- 4. Which vitamin deficiency leads to fertility disorders? Vitamin'E'(Tocoferol).

PRACTICE THE DIAGRAMS:

- 1. Draw and label the diagram of T.S of leaf and write few sentences about it (fig -7(a), txt Pg: 9)
- 2. Draw and label the diagram of T.S of chloroplast and write few sentences about it (fig -8, text pg: 10)
- 3. Flow chart of human digestive system: (text pg: 16)

MULTIPLE CHOICE BITS:

1.	Which of the following organisms take the food by parasitic nutrition?	()
	A) YEAST B)MUSHROOMS C) CUSCUTA D)Leeches		
2.	The rate of photosynthesis is not affected by	()
	A) Light intensity B) Humidity C)Temperature D) CO ₂ concentrate	tion	
3.	A plant is kept in dark cupboard for about forty eight hours before conducting any	7	
	experiment on Photosynthesis in order to:	()
	a) Remove chlorophyll from leaves b) Remove starch from lea	ives	
	c) Ensure that no photosynthesis occurred d) Ensure that leaves are fr	ee fro	m
	the starch		
4.	The digestive juice without enzyme is	()
	a) Bile b) Gastric juice c) Pancreatic juice d) saliva		
5.	In single celled animals the food is taken	()
	a) By the entire body surface b) Mouth c) Teeth d) Vacuoles	`	
6.	Which part of the plant takes in carbon-dioxide from the air for photosynthesis	()
	a) Root hair b) Stomata c) Leaf veins d) Sepals		
7.	Identify the incorrect pair	()
	A) Retinol – Xerophthalmia B) Calciferol - Rickets	`	
	C) Ascorbic acid – Pernicious anemia D) Riboflavin – Glossitis		

8. In the given diagram		_			(
A) Protein malnutri		*	malnutrition			
C) Protein-calorie n Paramoecium : Cyt		/	ung		(
•			D) Tentaclesl		(
10. Statement 1: Vitam	•	-	· · · · · · · · · · · · · · · · · · ·			
Statement 2: 2/3 of	_			India		
Statement 3: 2/3 of		_				
Statement 4: A,D,C		_		the world		
11. Find out the correct		e iai soiaoi	C VItaliilis		(
Mouth→ Bucca		→ Oesc	ophagus→?		(
A) Pharynx, stomac	•		B) Pharynx, du	odenum		
C) Larynx, nstomac			D) Pharynx, Liv			
12. Match the following		he correct o	, ,		(
i) Oxygen discovery		A) Pelletic			•	
ii) Oxygen name		B) Engelm				
iii) Discovery of ch	lorophyll	, -	Priestly			
iv) Point of maximu		· · · · · · · · · · · · · · · · · · ·	Lavoisier			
photosynthesis						
A) i- C, ii- D, iii- A,	, iv- B	B) i- A, ii-	B, iii-C, iv- D			
C) i- D, ii- C, iii- A	, iv- B	D) i- D, ii	-B, iii-A, iv-C			
		ACE (2.			
		2 IN SCIENT			,	
13. Identify the parts 1	and 2	Still Control	G PE		(
			8 4 4			
	9	TENCE IN	100 00 N			
A) 1- Duodenum, 2-	- Pancreace	Boologytea PY	I- Liver, 2- Pancre	ase		
C) 1- Pancrease, 2-		ALL COUNTY IN THE	1- Stomach, 2- Oes			
14. Which of the follow		_	i Stomacii, 2- Ocs	opingus	(
A) B12 vitamin is s	_	_	esent in the intestin	e	(
B) The finger like p	•	•				
intestine are called	-		The state of the s			
C) Ulcers occur mor		y people w	ho take meals in hu	ırry		
D) Intake of fiber ri				•		
15. Observe this picture		-				
largest internal orga					(
	B) Duodenui				`	
C) Liver	D) Gall bladd	ler	. 65 (0)			
C) LIVEI	in this picture	·	1		(
	B) Ma	rasmus				
16. Identify the disease						
16. Identify the diseaseA) Kwashiorkor	B) Ma D) Pel	lagra	the tissue of the ho	st plant is		
16. Identify the diseaseA) KwashiorkorC) Obesity	B) Ma D) Pel scuta that pend	lagra	the tissue of the ho	ost plant is D) Knees	(

18. Identify the labeled part	- 1 -	()
A) Chyme B) Bolus		(,
C) Chyle D) Porridge	Y		
19. Match the following	.a. 13	()
i) Ascorbic acid A) Rickets			
ii)Thiamin B) Blood clotting			
iii) Phylloquinone C) Beriberi			
iv) Calciferol D) Scurvy			
A) i- D, ii-C, iii-B, iv-A	B) i- C, ii- D, iii- A,	ı	
C) i- A, ii- B, iii- C, iv- D	D) None		
20. Observe the given data.			
i) Photosynthetic bacteria,	ii) Animals iii) Gr	reen plants iv) A	xmoeba
Which of the among these organi	sms come under autotrophs?	,	()
A) i, iii, iv B) i and iii	C) iii only	D) All the above	
21. Find out the odd one out			()
A) Retinol b) Calcifero	· ·	D) Ascarbic acid	
22. The given picture represents the		_	()
	erasmus C) Pellagra	D) Obesity	
23. Identify the functions of pyloric			()
i) It allows the food materials fro			
ii) It allows the food materials from			
iii) It prevents the backward flow			
iv) It allows the food materials fr			
A) i, ii &iii B) ii, iii &iv		D) ii & iv	(
24. Observe the below statements an		1 ' 0 1 .	()
A) Chloroplast converts simple o		iex organic Substan	ices.
B) Light energy is trapped in the			
	B) A is true, but B is false		
C) B is true, but A is false	D) Both A& B are false		
25. Observe the following diagram a A) Respiration B) Excretion			3
C) Nutrition D) Transpor		(3 3 3	\$
26. Pancreatic juice : Pancreas ; Bile			()
A) Mouth B) Liver	C) Duodenum	D) Oesophagus	()
27. Which vitamin is synthesized by		, 1	()
A) Folic acid B) Pantother			Calciferol
28. Which of the following plant is a	, · · · · ·	· · · · · · · · · · · · · · · · · · ·	()
A) Agar B) Fern plan		D) Pistia	,
BITS ANSWERS:	c) 210 dca	<i>D)</i> 1 1000	
1) C, 2) B, 3)B, 4)A, 5)A, 6)H	B, 7)C, 8)A, 9)C, 10)A.	11)A, 12)A, 13)	B, 14)D.
15)C, 16)B, 17)B, 18)B,			
26)B, 27)C, 28)C	, , , , , =-,=, -= , , ==,	, , , , , , , , , , , , , , , , , , ,	<i>)</i> - <i>)</i>

2. RESPIRATION

1 MARK QUESTIONS

1. What is Respiration?

Ans. The process of releasing energy from digested food is called Respiration.(Oxidation of food material to carbon dioxide and water,inths process energy is released.)

2. What are called as fixed air and vitilated air in olden days?

Ans. In olden days Carbon dioxide is called as fixed air and Oxygen is known as Vitilated air.

3. Which plays a maojor role in women's respiratory movements?

Ans. Ribs.

4. Which plays a maojor role in men's respiratory movements?

Ans. Diaphragm.

5. What is inhalation/inspiration?

Ans. Entry of air into lungs from outside is known as inhalation/inspiration.

6. What is exhalation?

Ans. Pushing of air from lungstoout side is called exhalation.

7. What is Pleura?

Ans. The lungs are protected by two membranes called Pleura.

8. What is called cellular respiration?

Ans. The oxidation of glucose (Respiration) takes place at cell level.hence it is called cellular respiration.

9. What is Glycolysis?

Ans. Break down of six carboned glucose molecule into two three carboned pyruvic acid molecules in the process of respiration is called Glycolysis.

10. What is Fermentation?

Ans. The respiration which occurs in Yeast in the absence of Oxygen results in the formation of Ethanol is called Fermentation. It is used in the preparation of alcohol, idly and dosa.

11. What are the factors that control the respiration?

Ans. Oxygen and Temperature.

12. What are called power houses of the cell? and why?

Ans. Mitochondria are called as Power houses of the cell because the energy produced in respiration is stored in mitochondria in the form of A.T.P.

13. Expand A.T.P.

Ans. Adenosine Tri Phosphate.

14. In which organisms exchange of gases takes place through Diffusion?

Ans. Amoeba, Hydra, Planarians.

15. What is tracheal respiration?

Ans. If the resipiration takes place through trachea then it is called Tracheal respiration Ex. Insects like Cockroach and Grosshopper.

16. What is bronchial respiration?

Ans.If the resipiration takes place through branachea / gills then it is called bronchial respiration. Ex. Fishes.

17. What is Cutaneous Respiration?

Ans. If the resipiration takes place through skin then it is called Cutaneous Respiration.

Ex. Earthworm and Frog.

18. What is Pulmonary respiration?

Ans. If the resipiration takes place through skin then it is called Cutaneous Respiration.

Ex.Reptiles, Birds and Mammals.

19. Why we are advised not to talk while eating food?

Ans. We advised so because while eating some food particles might enter the wind pipe, which results in Choking.

20. What is called Oxygen deft?

Ans. When we do stenous exercise, our muscles can't get enough oxgenimmediately. This condition is called Oxygen deft.

21. What are called aerial roots?

Ans.InMangrooves the form special roots above the soil surface and takes oxygen in through these rootsThis kind of roots are called aerial roots.

22. Why does a deep sea diver carry oxygen on his back?

A deep sea diver carries an oxygen cylinder for breathing. Because he can't use the oxygen which is dissolved in water like a fish.

2 MARK QUESTIONS

1. Write the differences between aerobic respiration and anaerobic respiration

Aerobic respiration	Anaerobic respiration
1.It takes place in the presence of	1.It takes place in the absence of oxygen
oxygen	ICE C
2.Glucose oxidized completely	2.Glucose oxidized incompletely
3.End products are co ₂ , and water	3.End products are ethyl alcohol or lactic
***	acid and co ₂
4.Lot of energy is liberated (38)	4.small energy is liberated (2 ATP)
ATP)	VCE IN IT SEE OF
5.It occurs in plants and animal	5.It occurs in some bacteria and human
cells	muscle cells

2. Why does the rate of breathing increase while walking up hill at a normal pace in the mountains? Give two reasons.

Reason-1: As we go up the hill above sea level the concentration of oxygen is greatly reduced. So we have to breathe the more to get required amount of oxygen.

Reason-2: ascending a mountain is an activity against gravitation. So, we have to use more energy to overcome the gravitational pull. To get more energy more oxygen is required. Hence, rate of breathing increases.

- 3. Plants photosynthesize during daytime and respire during the night. Do you agree to this statement? Why? Why not?
 - 1. No I don't agree. Plants photosynthesize during daytime only and respire during the daytime and night time also.
 - 2. During daytime of photosynthesis oxygen is produced. The leaves use some of this oxygen for respiration and the rest diffuses into air.
 - 3. During daytime of respiration CO_2 is produced and is all used up in photosynthesis.
 - 4. At night time no photosynthesis occurs and oxygen diffuses into leaves to carryout respiration.

4. What is the role of epiglottis and diaphragm in respiration? Epiglottis:

1. Epiglottis is a flap-like muscular valve controls movement of air and food towards their respective passages.

- 2. It stops food and liquid from going down into airway.
- 3. Epiglottis allows air pass through the larynx.

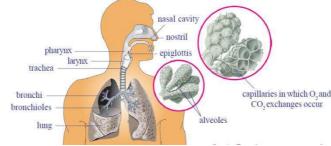
Diaphragm:

- 1. Diaphragm is a sheet of muscle, which separates the chest from abdomen.
- 2. During inhalation the diaphragm contracts, then the volume of chest cavity enlarges.
- 3. This reduce the pressure in the lungs, then air enters into lungs.
- 4. During exhalation the diaphragm relaxes, then the pressure on the lungs increases, the air come out of the lungs.
- 5. After a vigorous exercise or work we feel pain in muscles. What is the relationship between pain and respiration?

During vigorous exercise oxygen gets used up faster in the muscle cells to get high amount of energy. But the supply of oxygen is not sufficient. Then anaerobic respiration takes place in the muscle cells. During anaerobic respiration lactic acid is formed and is accumulated in the muscle cells. Lactic acid in the muscle cells causes muscular pains or cramps.

- 6. What happen if diaphragm is not there in the body?
- 1. Diaphragm place a major role in the respiratory movements.
- 2. Due to the contraction and relaxation of a diaphragm the pressure in the lungs decreased and increased. The inhalation and exhalation takes place.
- 3. If diaphragm is not present the inhalation, and exhalation will not takes place. Hence breathing fails which leads to the death of organism.
- 7. If you have a chance to meet pulmonologist, what questions you are going to ask about pulmonary respiration?
- 1. What is the cause for lung cancer?
- 2. What is asthma?
- 3. How can asthma be cured?
- 4. What is bronchitis?
- 5. How can bronchitis be cured?
- 6. What is pneumonia? How is it caused?
- 7. What is TB (Tuberculosis)? Can it be cured permanently?
- 8. Can all the diseases of lungs be cured permanently?
- 8. What is the pathway of air in human respiratory system? Illustrate with a labeled diagram

Nostrils \leftrightarrow nasal cavity \leftrightarrow pharynx \leftrightarrow larynx \leftrightarrow trachea \leftrightarrow bronchus \leftrightarrow bronchioles \leftrightarrow alveolus \leftrightarrow blood.



4 MARK QUESTIONS

1. Write the differences between respiration and combustion

Respiration	Combustion
1.It occurs in living cells	1.It is non cellular
2.It occurs at the body temperature	2.Heat is to be applied
3.Energy is released in several stages	3.Energy is released at once, as heat
4. Several intermediates are formed	4.No intermediates are formed

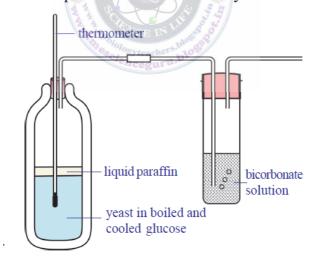
5.Enzymes are required	5.Enzymes aren't required
6.It occurs in the presence of water	6.It occurs in the absence of water
7.It is a controlled process	7.It is an uncontrolled process
8.Energy is stored in ATP in the body	8.Energy is not stored

2. Write the differences between Photosynthesis and respiration

Photosynthesis	Respiration
1.It occurs in plants and some bacteria	1.It occurs in all living organisms
2. Takes place in the presence of sunlight	2.Takes place in day and night
3.It is dependent on light	3.It is independent of light
4.Raw materials are CO ₂ and water	4.Raw materials are Carbohydrates
	and oxygen
5.Light energy is fixed as chemical energy in	5.chemical energy in carbohydrates is
carbohydrates	released
6.Oxygen is liberated and CO ₂ is utilized	6.Oxygen is utilized and CO ₂ is
	liberated
7.It is an anabolic process	7.It is a catabolic process
8.	8.
$6\text{CO}_2 + 12\text{H}_2\text{O} \xrightarrow{\textit{Light}} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{H}_2\text{O} + 6\text{O}_2$	$C_6H_{12}O_6+6O_2 \rightarrow 6cO_2+6H_2O+686K.cal$

3. What procedure do you follow to understand anaerobic respiration/ fermentation in your school laboratory?

Experiment to prove anaerobic respiration/fermentation in yeast:



Aim: to prove that co_2 /heat is released during anaerobic respiration.

Apparatus: Thermos flask, splitted corks, thermometer, wash bottle, glass tubes, liquid paraffin, glucose solution, yeast cells, bicarbonate solution.

Procedure:

- 1. Remove dissolved oxygen from glucose solution by boiling it in thermos flask for a minute and then cooling it without shaking.
- 2. Now add some yeast to the glucose solution and fix two-holed rubber stopper to the flask.
- 3. The supply of oxygen from the air can be cutoff. By pouring a 1cm layer of liquid paraffin into the mixture through the holes.

- 4. Insert one end of the thermometer into the thermos flask. See the end of thermometer kept inside the solution.
- 5. Arrange for any gas produced by the yeast to escape through a wash bottle containing bicarbonate solution or lime water as shown in the figure.
- 6. Add a few drops of diazine green (janus green B) solution to the yeast suspension before you pour liquid paraffin over it.
- 7. The blue diazine green solution turns pink when oxygen is in short supply around it.
- 8. Warm the apparatus to about 37°F in order to speed up the test.
- 9. Keep the apparatus undisturbed for one or two days.

Observations:

- 1. After two days it can be observed that lime water of the wash bottle turns into milky white precipitate.
- 2. Increase in temperature noted on yeast cells respire and release energy.
- **3.** Alcohol smell given off from the flask.

Result: These observations indicate that yeast cells respire anaerobically converting glucose solution into co₂, ethyl alcohol and releasing heat energy.

4. How you appreciate the mechanism of respiration in our body?

- 1. All systems in a living-being needs energy to survive. Energy is produced in respiration. So without respiration we wouldn't have energy to perform necessary day-to-day functions and to survive.
- 2. The respiratory system works from the moment of our birth without ever stopping. As long as we live our breath continuous.
- 3. Diaphragm plays a major role in the respiratory movements which helps in the inspiration and expiration. The role of diaphragm in respiration is highly remarkable.
- 4. Epiglottis a muscular flap like structure which prevents the entry of food particles into larynx. The role of epiglottis is really appreciable.
- 5. the most wonderful thing in respiration is the interior of lung is divided into millions of small chambers called alveoli which tremendously increasing the most surface available for transfer of gases between air and blood.
- 6. Gaseous exchange in the lungs by diffusion from the alveoli to blood capillaries and vice versa is really appreciable mechanism which helps in the sustenance of organisms.

5. Observe the diagram and answer the given questions:

1. What is the aim of this experiment?

Ans.to prove that carbon dioxide is released during respiration.

2. The liquid of which test tube turns milky?

Ans.Lime water.

3. Why does it turn so?

Ans.Carbon dioxide present in the exhaled air reacted with lime water.

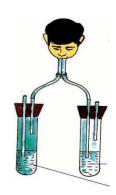
4. What do you infer from this experiment?

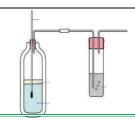
Ans..Carbon dioxide is released during respiration.

6. Observe the diagram and answer the given questions:

1. What is the aim of the experiment?

Ans. To prove that carbon dioxide is released during anaerobic respiration.





2. How are the apparatus arranged? and label the diagram.

Ans. See the

3. Why do we pour liquid paraffin wax on the surface of yeast and glucose solution?

Ans. To cut-off the supply of oxygen from air.

4. Why do we use diazine green solution in this experiment?

Ans. The blue dye turns pink when oxygen is in short supply around it.

5. What are you observations regarding the temperature?

Ans.Increase in temperature noted on yeast cells respire.

6. How do you confirm the release of carbon di oxide?

Ans. The lime water turns to milky white.

7. Observe the diagram and answer thr the given questions:

1. What is the main aim of this experiment?

Ans. To observe the changes during combustion of sugar.

2. What are the solutions taken in two test tubes?

Ans.Glucose solution and Lime water.

3. What changes do you observe in the lime water?

Ans: It turns to milky white.

4. What differences can you make between combustion and respiration?

Ans. Combustion is:

1. Unontrolled process. 2. Doesn't occurs in presence of water

Whereas Respiration is:

1. Highly controlled process. 2. Takes place when cells contains a lot of water.





1. What is the aim of this experiment?

Ans. To prove that carbon dioxide is released during aerobic respiration.

2. Why is to take only sprouted seeds?

Ans. The sprouted seeds can perform respiration in which carbon dioxide is released.

3. What is the solution in the beaker?

Ans.Lime water.

4. Write your observations made during this experiment?

Ans. After one or two days the lime water turn to milky white.

5. What inference can you make from the above experiment?

Ans .Carbon dioxide is released during aerobic respiration.

9. Observe the diagram and answer thr the given questions:

1. What is the aim of this experiment?

Ans. To prove that heat is liberated during respiration.

2. Why do you use only sprouted seeds for this experiment?

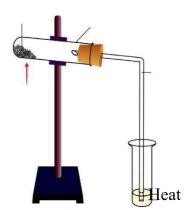
Ans. The sprouted seeds can perform respiration in which carbon dioxide is release

3. What do you infer by observing the initial and final reading?

Ans. Constant increase in the temperature is observed in thermometer

4. What is the main precaution to be taken during this experiment?

Ans. Take care that the bulb of the thermometer should be in the sprouts.





10. Answer thr the given questions:

Gas	% in inhaled air	% in exhaled air
Oxygen	21	16
Carbon dioxide	0.03	4.4
Nitrogen	78	78

1. Why does the amount of Oxygen vary between exhaled and inhaled air?

Ans. Because some amount of oxygen is utilized during cellular respiration.

2. What has raised the percentage of carbon dioxide in exhaled air?

Ans. Carbon dioxide is released from all the cells in the body in respiration.

DIAGRAMS

1. Draw and label the diagram of Mitochondria and write few sentences about it (figure - 10, pg:34)

MULTIPLE CHOICE QUESTIONS:

A) Nucleus

- 1					,
1)	Trachea: Wind pipe:: La	arynx :			(
	A) Epiglottis	B) Glottis	C) Voice box	D) Alveolus	
2)	Find out the correct mat	ching.			(
	SN TYPE OF RESPIR	ATION ANIMALS			
	1 Cutaneous respiratio		P a		
	2 Pulmonary respiration			1 8	
	3 Branchial respiration	Birds GE IV	CTen (7 -	
	A) 1, 2 & 3 B) 1 & 2 C) 1	& 3 D) 1 only		4 (
3)	The diagram represents				
,	- ·	B) Cuticle C) Lenti	cel D) Grana		
4)	The below given diagran	11/9/ 4	O K!		1
4)					1
	A) Gaseous exchange in	Concep	laries	810	
	B) Gaseous exchange in	tissues	200	11-14	
	C) Gaseous exchange be	tween blood & tissues	RAS	· f	
	D) Exchange of gasses be	etween tissues and bron	chiole Carbon	dioxide	
	,		del	10	
			A OX	gen /	
			Collection	1827	
			A.	257	
5	The common passage	of digestive and respirat	ory system is	1	١
5	A) Larynx	-		(D) Eniglatic	,
_	, ,	B) Pharynx	C) Trachea	D) Epiglotis	,
6) Choose the mismatche	ed one.		_ ()
	SN GAS	% OF INHALED AIR	% OF EXHALED AIR		
	1 Oxygen	21	18		
	2 Carbondioxoide		4.4		
	3 Nitrogen	78	78		
	A) 1 only	B) 1 & 2	C) 3 only	D) 2 only	
7	The energy released fr	om each ATP molecule i	·	()
	A) 7000	B) 7200	C) 7400	D) 7500	,
n	•	•	•	2,7500	١
ŏ) Photophosphorylation	: Chloroplast : : Oxidati	re phosphorylation :	()

D) Centriole

C) Vacuole

B) Mitochondria

9)	Identif	y the wo	ords whi	ch are le	ft in flov	v chart?					()
	Bre	athing	├ ┩ ,	Gaseous exchange a lungs level			?	Gased excha tissue	nge at	?		
	A) Tran	sportati	ion of ga	s by blo	od & Ce	llular res	piration	1	-			
	B) Celli	ılar resp	iration 8	& Transp	ortation	of gas k	y blood					
	C) Tran	sportati	ion of ga	s by lun	gs & Gas	seous ex	change	at alveo	li			
	D) Gas	eous exc	change a	t tissue	level & 0	Cellular r	espirati	on				
10)	Blue dy	e Diazir	ne green	is added	d to a so	lution in	the abs	ence of	oxygen.	It turns t	he solu	ıtion
	into										()
	A) Orai	nge colo	r		B) Gree	en color		C) Blac	ck color	D) Pink	color	
11)) In euka	ryotic c	ells cellu	ılar respi	iration t	akes pla	ce in				()
	A) Chlo	roplast		B) Cyto	plasm 8	k Mitoch	ondria		C) Vacı	uole	D) Nuc	cleus
12)) In prok	aryotic	cells like	bacteria	a, the ce	llular res	piration	n takes p	olace in _	_	()
	A) Mito	ochondri	ia		B) Cyto	plasm		C) Chlo	oroplast		D) A &	В
13)) HbO ₂ -	→ Hb + (O ₂ This	reaction	occurs i	n					()
	A) Lun	gs		B) Lary	nx		C) Tiss	ues		D) A &	С	
14)) Respira	atory org	gans of c	rocodile	and do	phins ar	e				()
	A) Lun	gs		B) Skin	7.7	C) Buco	co phary	ngeal c	avity		D) Trac	chea
15)) Which	organisr	m has m	ore than	one res	piratory	organs	?			()
	a.	Fish B)	Man C)	Frog D)	Dolphin		(1)					
16)) In whic	h organ	ism hae	moglobi	n is pres	ent in th	e plasm	a of the	blood		()
	a.	Man		B) Fish	S. C.	C) Eart	hworm		D) Coc	kroach		
17)	The sh	ape of d	iaphragr	m during	contrac	ction and	l relaxat	ion is _			()
	a.	Dome	& Flatte	ned	B) Flatt	tened Do	ome	C) Rou	ınd & Tri	angle	D) Nor	ne
18)) What v	vill happ	en to pl	ants if th	ne rate c	f respira	ition is r	nore tha	an that o	f photos	ynthesis	s?
											()
	a.	Live lo	ng but c	ant store	the car	bohydra	tes					
	b.	The pla	ant dies.									
	c.	Plants	grow ra _l	pidly								
	d.	Growth	h reduce	es and di	es due t	o hungry	/					
19)) Respir	ation in	amoeba	occurs	by						()
	a.	Osmos	is		B) Diff	usion		C) Rev	erse osm	nosis	D) Vac	uole
20)) Blood	is red in	color du	ue to a p	rotein c	alled					()
	a.	Hemod	yanin	B) Abse	ence of l	nemoglo	bin	C) Her	noglobin	D) both	b & c	
21)) Glucos	e : Pyru\	vic acid :	: Ferme	ntation	:		_			()
	a.	CH4		B) C2H	5OH		C) C6H	1206		D) CFC		
/ SI	HEET:											
		3) C	4) A	5) B	6) A	7) B	8) B	9) A	10) D	11) B	12) B	13)(
				18) A				,	, -	, -	, -	-,-
,	, -	, _	-· , -	,	, -	, _	, _					

TRANSPORTATION

1 MARK QUESTIONS

1. Name the components which are present in the human circulatory system?

Ans. Heart, blood, and blood vessels (arteries, veins and capillaries).

2. How heart is protected in our body? What is pericardial membrane?

Ans. Heart is protected by

- 1. Rib cage on three sides and by vertebral column on back side
- 2. Pericardium (A two layered sac, the layers are called pericardial membranes) and
- 3. pericardil fluid (the space present between the layers is filled with pericardial fluid).
- 3. What are the four chambers of the heart?

Ans. Right auricle, left auricle, right ventricle, left ventricle.

4. What are the blood vessels attached to the heart?

Ans.1.Superior venacava, 2. Inferior venacava, 3.Pulmonary vein, 4. Pulmonary aorta, 5. Systemic aorta, 6. A pair of coronary arteies 7. A pair of coronary veins.

5. Name the valves present human circulatory system?

Ans.1. Tricupsid valve (located between right auricle and right ventricle.)

- 2 .Bicupsid valve (located between leftt auricle and leftt ventricle.)
- 3. Valves are also located at the origin of each aorta.
- 4. Number of valves are present in veins.
- 6. What is cardiac cycle?

Ans. One contraction and relaxation of atria and ventricles which are repeated and the sequential events of the heart are called cardiac cycle.

7. What are systoleand diastole?

Ans. The contractive phase of the heart is called as systole. And the relaxation phase of the heart is called as diastole.

8. What is single circulation?

Ans. If blood flows through the heart only once for completing one circulation is called single circulaton.Ex.Fishes.

9. What is double circulation?

Ans.If the blood flows through the heart twice for completing one circulation is called double circulation.Ex.Man

10. What is edema?

Ans. Due to the accumulation of the lymph fluid in the lower parts of the leg, they become swollen. This condition is called edema.

11. What is tissue fluid?

Ans. The liquid portion of the blood flows out of the capillaries. This is called tissue fluid.

12. What is lymph?

Ans.Blood without solid particles is known as lymph.

13. What is lymphatic system?

Ans. Lymphatic system is a parallel system to venous system which collects tissue fluid from tissues and transforts it to the venous system.

14. What is open circulatory system?

Ans. The circulatory system without blood vessels is known as open circulatory system.here the blood is pumped into sinuses. The nutrients are directly supplied to the tissues.

15. What is closed circulatory system?

Ans. The circulatory system in which blood flows in blood vessels is known as closed circulatory system. Here the blood will supply nutrients to cells.

16. What is hyper tension?

Ans.B.P above the normal 120/80 is known as hyper tension. B.P lower than the normal 120/80 is known as low B.P.

17. What is serum?

Ans. The straw coloured fluid portion after the formation of blood clot is known as serum.

18. What is haemophilia?

Ans.Due to genetic defect the blood may not coagulate or clot. This defect is known as haemophilia.

19. What is Thalasemia?

Ans. It is a genetic disease in which severe anaemia is caused by deficiency of haemoglobin in red blood cells.

20. What is transpiration?

Ans. Loss of water in the form of vapour from the aerial parts of the plant body is known as transpiration.

21. Which tissue transports food to all parts of plant body?

Ans. Phloem.

22. Which tissue transports water to all parts of plant body?

Ans. Xylem.

23. Which organ acts as pump in the circulatory system?

Ans. Heart.

2 MARKS QUESTIONS

1. What is transport system? How this helps to the organism?

Transport system: The system which transports the material from where they are produced and to the place where they are needed is called transport system.

Uses:

- a. It transports the oxygen to every cell.
- b. It transports the hormones to all parts of the body.
- c. It collects and transports the carbon dioxide to the lungs for elimination.
- d. The waste materials of the cells are collected and transports to respective organs for elimination.
- 2. What is the use of platelets?
- a. They play an important role in blood clotting.
- b. They release several factors into the blood which help in blood clotting.
- c. When the blood vessel is injured they reach at the site of the injury and close the hole.
- 3. Write the differences between xylem and phloem vessels?

Xylem	phloem
-------	--------

1. It transports water and minerals from roots to all parts of the plant.	1. It transports food material from the leaves to all parts of the plants.
2. It gives mechanical strength to the plant.	2. It does not give mechanical strength.
3. Water transported in one direction.	3. Food transported in two directions.
4. Xylem is present at the center of the vascular bundle.	4. Phloem is present on outer side of the vascular bundle.

4. What is root pressure? How is it useful to the plant?

Due to absorption of water by root hairs, a pressure develops in the xylem vessels. This pressure is called root pressure. Root pressure is responsible for movement of water in plants by few meters.

4 MARK QUESTIONS

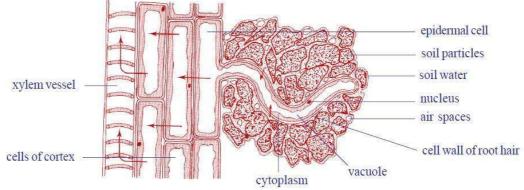
1. Write the differences between veins and arteries?

Veins	Arteries
1. Moves towards the heart	1. Move away from the heart.
2. blood collects from body	2. Distributes blood to the body
organs	organs.
3. Blood pressure is low	3. Blood pressure is high.
4. Valves are present	4. Valves are absent.
5. Carry deoxygenated blood,	5. Carry oxygenated blood, except
except pulmonary vein.	pulmonary artery.
6. Veins start in blood capillaries.	6. Arteries end in capillaries.
7. Veins have large lumen.	7. Arteries have small lumen.
8. Veins are bluish in color.	8. Arteries are reddish in color.

2. Explain the way how plants get water by osmosis through root hair? (or)

What will happen if cell sap of root hair cells contain high concentration of ions?

- a. Root hair plays an important role in absorption of water by osmosis.
- b. Root hairs grow out into the spaces between the soil particles and that the hairs are surrounded by moisture.



- a. The soil water is most dilute than that of the cell sap in the root hair, therefore water will pass into the vacuole of the root hair by osmosis.
- b. The entry of water dilutes the contents of the root hair vacuole so that it becomes weaker than its neighbor.

- c. Therefore water passes into the neighboring cell which in turn becomes diluted, finally water enters the xylem vessels.
- d. As there are vast number of root hairs and root cells involved, a pressure in the xylem vessels develops which forces the water upwards. This total pressure is known as root pressure.
- e. Root pressure pushes the water upwards by few meters and is enough to supply water in small plants herbs and shrubs.
- 3. How can you prove that the water transport through the xylem?

Aim: To prove that water transport through the xylem.

Apparatus: Balsam plant, beaker, Eosine solution, stand.

Procedure:

- 1. A leafy green balsam plant with a transparent stem is placed in eosine solution.
- 2. After some time red streaks appear in the stem and veins of leaves become red.
- 3. If we do the section cutting of the part which becomes red, it is proved that it is xylem tissue.
- 4. This shows that water moves up the root into the stem and leaves in the xylem vessels.
- 5. The other tissues remain in the same color.

Conclusion: The water transports in the plants through xylem vessels.

- 4. How do you feel about transportation of water in huge trees? (or) Explain the process of water transportation in plants?
- a. In huge trees water is transported to a height of 120mts.
- b. The root pressure and transpiration pull are responsible for the water to reach such heights.
- c. Water is absorbed by the osmosis from the soil by the root hair and is passed into the xylem vessels.
- d. The root pressure can lift the water by a few meters of height but it is not possible to lift such a height in tall plants.
- e. Here the water evaporates through stomata of leaves.
- f. Evaporation creates the main pull from the above, the root pressure gives a minor push from below.
- g. This result a continuous column of moving water in xylem vessels.
- h. Hence I should appreciate the root pressure and transpiration pull to conduct water to a great distance without any energy supplied from outside.
- 5. After reading this lesson what precautions you would suggest to your elders about edema?

Edema: When we travelled overnight in sitting position without moving, the lower part of the legs will be swollen. This stage is called edema. It happens due to the accumulation of lymph fluid in the muscles of the leg.

Precautions:

- a. Avoid sitting and standing for too long. Getting up and stretching the legs ones in a while avoid fluids buildup.
- b. Keep the legs elevated above the level of the heart for 30 min a day.
- c. Massage the affected area with frim pressure towards the heart.
- d. Low salt diet can reduce swelling.
- e. Diuretics, medications held increase urine output, excrete water and sodium.
- f. Avoid temperature changes. When going from heart doors into an air condition room or vice versa can make edema worse.
- 6. Observe the diagram and answer the given questions:
- 1. What is the aim of this experiment?

Ans. To demonstrate the root pressure in plants.

2. How are the apparatus arranged in this experiment?

Ans. See the

3. Why is the glass tube connected to the stem?

Ans. To observe / measure the water level.

4. What is the inference can you draw from the above experiment?

Ans. The raise in the water level is due to the root pressure created in plants

7. Answer the given questions:

New born	Infants(3-6M)	Infants(6-	Children(1-	Children over	Well trained
(0-3M)		12M)	10y)	10Y & adults	adults.
100 - 150	90 - 120	80 - 120	70 - 130	60 - 100	40 - 60

1. The rate of heart beat in new born?

Ans. 100-150.

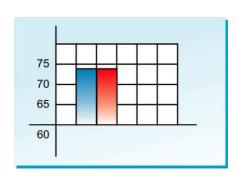
2. The rate of heart beat in infants(6-12M)?

Ans. 80-120.

3. The rate of heart beat in children over 10 and adults?

Ans. 60-100.

- 4. The rate of heart beat in well trained athlets?
- 5. Ans.40-60
- 1. What is the relationship between the heart beat and the pulse? Ans.rate of pulse will be equal to to the number of Heart beats.
- 2.Can we say, the pulse rate is always equal to the heart beat? Ans.Yes.



8. Answer the given questions:

S.No	Structure / Function	Artery	Vein
1	Thickness of the walls (thick/thin)	Thick	Thin
2	Valves (Present/absent)	Absent	Present
3	Capacity to retain shape when blood is absent.(can	Can retain	Can retain
	retain/collapse)		
4	Direction of blood flow (heart to organs/organs to	Heart to	Organs to heart
	heart)	organs	
5	Pressure in the vessel (high/low)	High	Low
6	Type of blood transported (Oxygenated/	Oxygenated	De-
	de- oxygenated)		oxygenated
7	Type of blood transported by pulmonary	De-	Oxygenated
	(Oxygenated/de- oxygenated)	oxygenated	

9. Answer the given questions:

Name of the animal	Weight of the body	Weight of the Heart	No of beats /min
Blue whale	1,50,000 kg	750 kg	7
Elephant	3000 kg	12-21 kg	46
Man	60-70 kg	300 gm	76
Coaltit(bird)	8 gm	0.15 gm	1200

1. Number of heart beats/min in Blue whale?

Ans. 07.

2. Number of heart beats/min in Man?

Ans. 76.

3. Number of heart beats/min in Coaltit?

Ans. 1200.

4. What is the relation ship between weight of the heart and number of heart beats?

Ans. If the weight of the heart decreases then the rate of heart beat increases.

DI	CD	AMS
D 1 F	IGK	AIVIO

1.	Draw and label the diagram of Internal structure of heart and write few sentences about it -
	(fig:5, Pg-52)

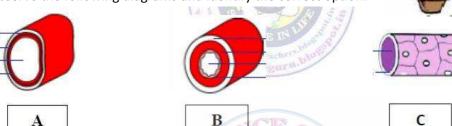
MULTIPLE CHOICE QUESTIONS:

C) Guttation

1)	The systolic and diastolic	c pressure respectively are	e		()
	A) 120 and 80 mm Hg	B) 80 and 120 mmHg	C) 120 and 180 mm Hg	D) 80 ar	nd 140 m	ım Hę
2)	The given diagram indica	ates the experiment to pro	ove	245	1	\neg
	A)Transplantatio	on B) Transportation			`	_′

3) Observe the following diagrams and identify the correct option.

D) Transpration



B-T.S of vein, C-T.S of Blood capillary A) A - T.S of artery, C-T.S of Blood capillary B) A - T.S of vein, B- T.S of artery, C) A - T.S of Blood capillary, B - T. S of vein, C - T.S of artery

D) A – T.S of Blood capillary, B - T.S of artery, C-T.S of vein 4) In the root _____ tissue is situated towards the exterior where as in the stem it is arranged in _

towards the center. A) Xylem & Bundles B) Phloem & Xylem C) Xylem & Phloem D) Bundles & Xylem

1 Cnidarians Gastro vascular cavity 2 Annelids **Eucoelomate animals**

B) 1 & 3 wrong

3 Nematoda Pseudopodium

5) Choose the correct option.

A)All correct

Amoeba Brownian movement

6) In which organism for the first time we find blood as the medium of transport?)

C) 2 & 4 wrong

A)Platyhelmenthis B) Nematyhelmenthis C) Annelids D) Arthopoda

7) The separate system to transport the tissue fluid into the main blood stream

A)Water vascular system B) Lymphatic system C) Circulatory system D) Digestive system

8) Identify the following diagram)

B) Stethoscope A)Manometer C)Sphygmomanometer D) Thermometer)

D) 1, 2 & 3 wrong

9) Hrudaynada is not sitt	9) Hrudaynada is not sitting and standing in the same position for longer time without moving. Why? ()					
A)To avoid asthma	B) To avoid muscular	pain C) To avoid ed	dema D) To	avoid heart beat		
10) Find the true stateme A) B) C) D)	There is a relation bet Water travels through The right side of the h	tween transportation and n xylem and food materia neart receives blood from ody receives blood from	al through phloe			
A)All are correct	B) All are wrong	C) 1 & 2 are correct	D) 1, 2 & 3 ar	e right		
11) The yellowish straw coA) Plasma12) The intercellular fluid	B) Heparin	C) Albumin	s called D) Srum	()		
A)Serum	B) Heparin	C) Plasma	D) Globulin			
13) Match the following.				()		
i. Artery	a)Tough fibro	ous coat, muscle layer, lin	ing cells (endot	helium)		
ii. Vein	b) Lumen, lini	ing cells (Endothelium)				
iii. Blood capil	laries c)Elastic fibro	us coat, muscle layer, lin	ing cells (endot	helium)		
A)i- c, ii- b, iii- a	B) i- b, ii- c, iii- a	C) i- a, ii- b, iii	- c D) i-	c, ii- a, iii- b		
14) Identify the pathway (A) B) C) D)	Fibrin → Thrombin → Thrombin → Thrombokinase → Thrombokinaes →	s. → Prothrombin → Thr bokinase → Prothromb Thrombin → Prothro Prothrombin → Thror	in →Fibrin → nbin → Fibrin	→ Clot		
15) Identify the following A)Tetracircula C) Double circ	=			()		
16) Identify the following as	diagram . The study of i	t is called	J	()		
A)Pulmonology	B) Nephrology					
C) Cardiology	D) Neurology		A STATE OF			
17) Rene Laennac discove A)Bioscope 18) Evaporation of water A)Transportation	B) Sphygmomanomet through the leaves is cal B) Guttation	C) Transpiration		() D) Spirometer () ater movement		
19) The instrument used t A)Manometer	to measure B.P B) Sphygmomanomet		D) Sp	() Dirometer		
20) The cardiac cycle is co A)0.6 sec	ompleted in approximate B) 0.7 sec	ely C) 0.8 sec	D) 0.10 sec	()		

A)Meninges 22) The largest arte	B) Plei	ura	C) Perii	oluronium	D) P	ericardiu	m
-2/ The langest arter	ry in the hody				271	(١
A)Arota		C) Pı			enacova	`	,
23) Single circulation	•	•	•	Β, •	chacova	1	١
		C) Human		D) Gorilla		`	,
24) The vitamin whi	•	•		•		1	١
A) A	B) C		D) K			(,
25) The type of gene	•	•	-	eo agulato		,	١
A)Anaemia		_	i illay flot c	C) Downy syr		D) П∙ (<i>)</i> aemophilia
26) Kidney : Renal ;	• •	•		C) DOWNY SY	idionie	υ) 11α 1	۱
A)Pulmonary			C) card	iac	D) bronchi	(,
				iac	D) broncin	,	1
27) Pulmonary : Lun			– C) Bone	_	D) Water	()
A)Blood	B) Bra		•	=	D) Water	,	١
28)vitar	•		•		D) Dlavilla	()
A)Tocoferol	•		•	ferol	, , ,	none ,	,
29) The valve that is	•					()
,	•	upsid	-,		_,	,	•
30) The valve that is	•	_	`	_		()
, =	B) tric		C) Pulm		D) Arotic		
31) Identify the type		in the fish tha	t represent	s the		()
following diagra			OT C				
A)Single circulat				12 N			
C) Pulmonary ci	rculation	D) Systemic	circulation		N N		

KEY S	HEET:				100	encegu	ru.blos					
1) A	2)D 14)D	3)B	4)A	5)A	6)C	7)B	8)C	9)C	10)A	11)D	12)C	13)D
15)C	16)C 28)D	17)C	18)C	19)B	20)C	21)D	22)B	23)B	24)D	25)D	26)C	27)A
29)D	30)B	31)A										

4. EXCRETION

1 MARK QUESTIONS

1. What are the excretory substances in human beings?

Ans. Carbondioxide, Nitrogenous wastes like Ammonia, Urea, Uricacid. the most poisonous of all wastes is Ammonia.

2. Name the excretory substance which is utilized in other activities?

Ans. The oxygen which is produced in photosynthesis is utilized in the respiration of plants.

3. What are the excretoty organs in humanbeings?

Ans. Kidneys,LungsLiver,andSkin.Kidneys are the chief excretory organs and skin, lungs,liver are the accessory excretory organs.

4. What is the structural and functional unit of kidney?

Ans. Nephrons. Each kidney has 1.3 to 1.8 millians of Nephrons.

5. Why is the diametr of the afferent arteriole is bigger than efferent arteriole?

Ans. The afferent arteriole has a larger diameter than the out going efferent arteriole and this rises the pressure in the glomerulus capillaries lead to the ultra filteration of the blood in the bowman's capsule.

6. What is called primary urine?

Ans. The filterate from the glomerulus is called primary urine. And this is equal to the blood except in having blood cells.

7. What happens in the deficiency of vasopressin?

Ans. Deficiency of vasopressin causes the excessive, repeated, dilute urination called diabetes incipidus.

8. What is micturition?

Ans. The process of discharge urine from urinary bladder is called micturition.

9. What is uremia?

Ans. If the kidneys stop working completely then our body is filled with extra water and waste products. This is called uremia.

10. What is haemodialysis?

Ans. Filtering the blood of person whose kidneys are damaged with dialysis mechine is called haemodialysis.

11. What is ESRD?

Ans. The complete and irreversible kidney failure is called End Stage renal Disease.

12. Why the children urinate frequently/often?

Ans. Theharmone vasopressin is not secreted in enough levels in children and the bladder capacity also reduced. So the children urinate often.

13. What are the processes used by the plants to get rid of excessive water?

Ans. Traspiration and Guttation

14. Give examples for secondary metabolites?

Ans. Alkaloids, Tannins, Resains, Gums, and Latex.

15. Give examples for alkaloids?

Ans. Quinine, Nicotene, Morphine, Resrpine, Caffiene, Nimbin.

16. Give two examples for gum yielding plants? Write the economic importance of gums?

Ans. Neem&Acacia.Gums are used as adhesive and binding agent.

17. What is latex?

Ans. Lattex is stiky milky white substance secreted by plants. Rubber is prepared from the latex of the Heveabraziliensis and bio diesel is obtained from the latex of the Jatropa plant.

18. What are resins?

Ans. Gymnosperms have specialized resin passages. These are used in preparation of Varnishes.

19. What are Tannins?

Ans. Tannins are carbon compounds. These are used in tanning of the leather and in medicines. Ex. Acasia, Cassia.

20. Why nephrons are considered as structural and functional units of the kidneys?

Ans. Each kidney is made up of number of Nephrons. Filteration blood takes place in nephrons. Hence nephrons are considered as structural and functional units of the kidneys.

2. MARK QUESTIONS

1. Urine is slightly thicker in summer than in winter. Give reason?

Generally in summer more amount of water is exerted out in the form of sweat. The body has to retain the water against the heat of the sun. Vasopressin is secreted by adrenal gland, which helps in the formation of concentrated urine and prevents the excess loss of water from the body.

2. What are the differences between Excretion and Secretion?

Excretion	Secretion
Excretion is the removal of material from living beings.	Secretion is the movement of materials from one point to other point.
Excretion is passive in nature.	Secretion is active in nature.
Humans excrete materials such as tear, urine, CO2 and sweat.	Secretion includes enzymes, hormones andsaliva.
In plants excretion is done through roots, leaves and bark.	Secretions occur in the plant body in the form of latex, resins, gums, etc.

3. What are the differences between Primary metabolites and secondary metabolites?

Primary metabolites	Secondary metabolites
They are involved in normal growth	They are not directly involved in the
development and reproduction	normal growth, development and
	reproduction
Examples are carbohydrates, fats	Examples are Alkaloids, tannins, resins,
and proteins.	gums and latex etc.

4. Imagine what happens if waste materials are not sent out of the body from time to time?

If waste materials are not sent out of the body from time to time they get accumulated in the body. The accumulation of toxic wastes in the body leads to death of the organism.

4 MARK QUESTIONS

1. Name different excretory organs in human body and excretory material generated by them?

Excretory organ	Excretory material
1.kidney	Filters blood and eliminates nitrogenous wastes.
2.Lungs	Remove carbon dioxide and water in respiration.

3.Skin	Sweat glands remove sweat which contains water, minerals, and metabolic wastes. Sebaceous glands remove sebum which contains waxes, sterols, hydro carbons, fatty acids.
4.Liver	Bile pigments, Urochrome.
5.Intestine	Excess salts of calcium, magnesium and iron along with faeces by colon.
6.Salivary glands and lacrimal glands	Nitrogenous wastes.

2. Deepak sat that 'Nephrons are functional units of kidney'. How will you support him?

- 1. I support Deepak's statement.
- 2. Nephrons eliminate wastes from the body.
- 3. They regulate blood volume and blood pressure.
- 4. They control the levels of electrolytes and metabolites.
- 5. They also regulate blood P^H.
- 6. Hence, nephrons are the functional units of kidneys.

3. To keep your kidneys healthy for long period what questions will you ask a nephrologist/urologist?

- 1. How can I prevent formation of stones in kidney?
- 2. Does a renal failure hereditary?
- 3. How diabetic harm kidneys?
- 4. How blood pressure harms kidneys?
- 5. How do I keep my kidneys healthy?
- 6. What is kidney failure?
- 7. What are the factors responsible for kidney failure?
- 8. How much water should I drink per day?
- 9. If one kidney fails can we live on another kidney?

4. What are the gum yielding trees in your surroundings? What procedure you should follow to collect gum from trees?

Plants like Neem, Acacia secrete a sticky substance called gum.

Procedure:

- 1. To obtain gum branches are cut or a cut is made on the stem or a branch.
- 2. A vessel is arranged at the cut portion.
- 3. To heal the cut portion the gum secretes out by absorbing water and helps in the healing of damaged parts of plants.
- 4. The gum which secretes out into the vessels is collected.

Uses:

- 1. Gums are economically valuable being used as adhesive.
- 2. They are used as binding agents.
- 3. They are used in the preparation of medicines.

5. Collect the information about uses of different kinds of alkaloids, take help of library.

Alkaloids are the nitrogenous byproducts and poisonous. These are stored in different parts of the plants.

Alkaloid	Plant	Part	Uses
Quinine	Cinchona officinalis (Cinchona)	bark	Antimalarial drug
Nicotine	Nicotiana tabacum (Tobacco)	leaves	insecticide

Morphine,	Papaver somniferum (Opium)	fruit	Pain killer
Cocaine			
Reserpine	Rauwolfia serpentine (Snake root)	root	Medicine for snake bite
Caffeine	Coffea Arabica (Coffee plant)	Seed	Central nervous system stimulant
Nimbin	Azadirachtaindica (Neem)	Seeds, Bark, Leaves	Antiseptic
Scopolamine	Datura stramonium	Fruit, flower	Sedative
Pyrethroids	Chrysanthemum	Flower	insecticides

6. List out the things that make you amazing in excretory system of human being.

- 1. Kidneys remove garbage from our body. They also work to balance the amount of water, minerals, vitamins, proteins and fat in the blood.
- 2. The right and left kidneys are assisted by a number of organs in the body which help in disposing the waste products.
- 3. Our intestine makes solid waste material and is excreted through digestive tract.
- 4. Each day our body eliminates around 1.6 to 1.8 liters of the liquid.
- 5. In one individual's life span, the liver can produce 184.27kgs of bile juice.
- 6. In one's life span, an individual could urinate 7.85 billion gallons of fluid.
- 7. The urinary bladder can held 400 ml of urine.
- 8. Skin also eliminates the wastes through sweat.
- 9. Urine contains high amount of urea, which can be used by plants as a source of nitrogen.

7. Our people have very less awareness about organ donation. To motivate people prepare slogans about organ donation?

- 1. Help someone to live after death.
- 2. Be an organ donor, all it costs is little love.
- 3. At last you die, donate your eyes.
- 4. Help a generation with organ donation.
- 5. Let someone see through your eyes what you have seen.
- 6. Have a heart save a life.
- 7. Organ donation saves lives.
- 8. Organ donation is a gift for life.

8. After learning this, what habits you would like to change or following for proper functioning of kidneys?

- 1. I always eat the home cooked meals. I avoid eating canned foods, fast foods, and highly processed food.
- 2. I should adopt to take low salt diet to help controlling blood pressure and slow down kidney damage.
- 3. I replace high protein food like meat, eggs and milk products with low protein food like grains and vegetables.
- 4. I avoid taking high phosphorus foods such as cheese, cool drinks and butter.
- 5. I eat food with low potassium levels like apples, watermelon, cucumber, grapes, cherries and carrot. High potassium levels cause irregular heartbeats.
- 6. High sodium content in the food damages kidneys. Hence I avoid high sodium food like potato chips, cheese, meat, canned vegetables, canned soups and table salt.

9. Answer the given questions:

Life processes	products
Photosynthesis	Oxygen
Respiration	Carbon dioxide, Water

- 1) What are the end products of photosynthesis?
- 2) What are the end products of respiration?
- 3) What is the major difference between photosynthesis and respiration?
- 4) Do both the life processes occur in plants?

10. Answer the given questions:

Blood report

Test/Method	Result	Units	Range
Glucose fasting	82	Mg/dl	60-100
Sodium	137	Mmoles/L	135-145
Potassium	4.10	Mmoles/L	3.5-5.0
Creatinine	2.8	mg/dl	0.6-1.5
Uric acid	7.50	Mg/dl	3.0-5.0
Total Cholestarol	221	Mg/dl	150-200

1. What materials are in normal range?

Ans. Glucose fasting, Sodium, Potassium.

2. what materials are in above the normal range?

Ans. Creatinine, Uric acid, Total Cholestarol.

11. Answer the given questions:

Urine report

Test/Method	Result	Units	Range
24 hrs.Protien	90 VCE 1	Mg/day	<100 mg
24 hrs.creatinine	2.7 Carlogyteach	Mg/day	1-2
24 hrs.Calcium	305	Mg/day	Up to 200
24 hrs.Phosphorus	0.8	Mg/day	Up to 1 g
24 hrs.Uric acid	800	Mg/day	Up to 600

^{1.} What materials are in normal range?

Ans. Protiens, Phosphorous.

2. What materials are in above the normal range?

Ans. Creatinine, Uric acid, calcium.

12. Answer the given questions:

Name of the phylum/class organism	Excretory system
Porifera and coelenterates	Water bathes almost all their cells
Platyhelminthes	Flame cells
Arthropoda	Green glands, Malpigian tubules
Reptiles, Aves and Mammals	Kidneys

1. What are the excretory organs in Porifera and coelenterates?

Ans. Water bathes almost all their cells.

2. Animals of which phylum have Flame cells?

Ans. Platyhelminthes.

3. Excretory organs seen in Arthropoda?

Ans. Greenglands, Malpigian tubules.

4. Kidneys are seen in animals of which classes?

Ans. Reptiles, Aves and Mammals.

13. Answer the given questions:

Alkaloid	Plant	Part	Uses
	Cinchona officinalis		
Quinine	(Cinchona)	Bark	Antimalarial drug
Morphine,	Papaver somniferum		
Codeine	(Opium)	Fruit	Pain killer
	Coffea Arabica (Coffee		Central nervous system
Caffeine	plant)	Seed	Stimulant
		Seeds, Barks,	
Nimbin	Azadirachtaindica(neem)	Leaves.	Antiseptic

1. Antimalarial drug(Quinine) is obtained from this Plant?

Ans. Cinchona officinalis (Cinchona).

2. The fruits of Papaver somniferum (Opium) are used in preparation of-----? Ans.Pain killers.

3. Scientific name of Coffee plant?

Ans.Coffea Arabica.

4. Nimbin is used as -----?

Ans. Antiseptic.

DIAGRAMS

- 1. Draw and label the diagram of Human excretory system and write few sentences about it(fig- 4-of text book)
- 2. Draw and label the diagram of internal structure of kidney and write few sentences about it (fig- 5- of text book)
- 3. Draw and label the diagram of structure of a nephron and write few sentences about it(fig -6 – of text book)

MULTIPLE CHOICE QUESTIONS

1)	Identify the r	nismato	ched pair.		()
•	1. Alkaloids		Cassia			,
	2. Tanins	•	Acacia			
	3. Gums	:	Scopolamine			
	4. Resins	:	Pinus			
	A)1, 2, 3 & 4	ļ	B) 1, 3 & 4	C) 1 & 3	D) 1 & 2	
2)	Choose the correct statement.			()	
	1. After 120 days of RBC life span they die in the liver					

- 2. Liver is also involved in urea formation
- 3. The best long term solution for kidney failure is kidney transplantation
- 4. Sebaceous glands in the skin eliminate sebum

A)Only 1 is correct B) Both 1 & 2 ae correct C) All are correct D) All are wrong

3)	Identify the structure which is the largest gland in the body					
	A)Pancreas B) Large intestine	C) Liver	D) Small intestine	To the second		
4)	The excretory organs in the nem	atode are			()
		ephridia —	C) Renette cel	ls	D) Kie	dney
5)	Match the following.	•	,		()
	List I List	II			`	•
	1 Flame cells	a Anneli	da			
	2 Water vascular system	b Arthop	oda			
	3 Green glands	c Echino	dermata			
	4 Nephridia	d Platyh	elmenthis			
	A)1-d, 2-c, 3-b, 4-a B) 1-a, 2-b	, 3-c, 4-d	C) 1-c, 2-d, 3-	a, 4- c D) 1-	b, 2-d,	3-a, 4-c
6)	The process observed in the give	n diagram	is		()
	A)Transplabntation B) C	hemothera	ру \prod	5		
	C) Dialysis D) T	ransportati	on J			
5)	Which alkaloid is used as CNSS	stimulant?	↑ <u>↑</u>		()
	A)Reserpine B) Caffeine	C) Scopolamine	D) Py	rethroic	c
7)	Why the pposition of right kidne				()
	A) Presence of the lungs above i					
	C) Presence of liver above it	D) Presence of the sto	omach above	it :	
8)	ESRD stands for	* / %	*		()
	A)End stage royal disease) End site renal dise			
	C) Emergency stage renal disease	e Diologo) End stage renal di	sease		
9)	Find the odd one out from the fo				()
	A) Kidney B) L	0	C) Liver	D) Sto	omach	
10	The following diagram represent	S			()
	A) Removal of kidney	*	ey plantation		100	
	B) C) Kidney donation	D) Kidn	ey transplatation			

11) Statement 1: Bunch of fine blood capillaries are called Glomerulus				
Statement 2: Glomerulus develop	s from afferent arteri	iole		
Find out the correct statement from	=		()
A)Both are false B) 1 correct a	& 2 wrong	C) Both are correct	D) B	oth are
false			,	
12) Things that make you amazing in	• •	-	_()
A) Each kidney is made up of		-		
B) Approximately 120 ml of t		· -		
C) Ureters are very thin but ca	an regulate floe of ur	rine		
D) All the above				
13) The failure of kidney is called			()
A) FSRD B) ASRD	C) KSRD	D) ESRD		
14) A person's limbs are swollen and	he is suffering from	weakness and fatigue	e. Whi	ch
organ may be damaged?			()
A) Brain B) Heart	C) Kidney	D) Liver		
15) Every day Dheeraj's brother pass	ses urine at a particul	ar time on the bed. W	/hat m	ay be
the reason?	NCE CA		()
A)Less production of adrenalin	B) More pro	duction of vasopressi		
C)No production of adrenalin	D) Vasopres	sin is not at all releas	ed	
16) Find out wrong statement	(>		()
Statement 1: Urine is acidic in the				
Statement 2: The urine is tempora	Of Carlotte	•		
Statement 3: The condition in whi	ich the body is filled	with extra water and	waste	
products is called Uremia	1 1 100	1		
Statement 4: Urethra is 4 cm long		-	D) 4	0 4
,	nly 3 is wrong	C) Only 4 wrong	D) 3	& 4
wrong	.1 1 :		:	-111
17) The process of control of water ba	arance and ion conce	muanon in an organis	ill is c	aned
A)Osmosis B) Diffusion	$C) \cap C$	amaragulation	D) D	<i>)</i> ialysis
18) Plants can get rid of excess of war	· · · · · · · · · · · · · · · · · · ·	smoregulation	ע (ע ו	lalysis
A) Transportation, Transpiration	-	n, Transportation	(,
C) Transpiration, Guttation	*	ansportation, Secretic	าท	
19) Find out the correct statement	<i>D)</i> 11	ansportation, secreti)11 ()
1. Enzymes, hormon	nes and saliva are sec	retions in human hod	W	,
2. Tears, urine, CO2			-	dv
3. Latex, resins, gum		•	nan oo	uy
4. Falling of leaves,			niah re	oote
are modes of excre		ie wasie maieriai une	ugn IC	Jou
are modes of excit	ction in plants.			

A)1 & 2 are correct B) 1, 2 & 4 are correct C) All are correct D) 1	& 4
are correct	
20) If a man takes in large amount of protein he is likely to secrete more amount of ()
A) Sugar B) Urea C) Uric acid D) Ammonia	
21) Identify the primary metabolites. ()
A)Fats b) Gums c) Latex d) Tannins	
22) The alkaloid used for malaria treatment is ()
A)Cocaine b) Reserpine c) Quinine d) Nimbine	
23)Biodiesel is extracted from the latex of ()
A)Jatropa b) Eucalyptus c) Acacia d) Partheniu	m
24) Specific excretory structures appear for the first time in ()
A)Nematihelmenthis b) Porifera c) Coelentirata d) Platyhelmenthis	
25) The sedative extracted from the flower and fruit of Daturastromonium is _ ()
A)Nimbin b) Scopolomine c) Pyrithriods d) Reserping)
26) Which of the following alkaloid is used as a medicine for snake bite? ()
A)Nicotine b) Morphine c) Reserpin d) Nimbine	
27) Nitrogenous substances present in pollen grains in this plant causes asthma ()
A)Nerium b) Parthenium c) Chicel d) Acasia	
28) Modern chewing gum is originally made of ()
A)Neem b) Chicle e) Jathropa d) Pinus	
29) These plants ae used in varnishes ()
A)Casia b) Acacia c) Pinus d) Ne	em
30) The most poisonous of all waste products of metabolism is ()
A)Urea b) Uric acid c) Ammonia d) Bilerubin	
31) The organism that removes waste products by simple diffusion is ()
A)Earth warm b) Amoeba c) Star fish d) Planarian	
KEY SHEET:	
1)C 2)C 3)C 4)C 5)A 6)C 7)B 8)C 9)D 10)D 11)D 12)C 13)D	14)D
15)C 16)D 17)C 18)C 19)C 20)C 21)B 22)A 23)C 24)A 25)D 26)B 27)C	28)B
29)B 30)C 31)C 32)B	

5. COORDINATION

1 MARK QUESTIONS

1. Howmany types nerves are there? What are they?

Ans. a)Afferent nerve (sensory nerve),(b)Efferent nerve (motor nerve), Association nerve (mixed nerve)

2. What is reflex arc?

Ans. The route followed by nerve impulse in the production of reflex act, from receptor organ through afferent nerve to the spinal cord and then through the efferent nerve to effector organ.

3. What is stimuli and response?

Ans. Stimuli: The changes which occur outside of the body are called Stimuli.

Response: The reactions that shown by our body for stimuli is called Response.

4. What are the divisions of the brain?

Ans. a)Fore brain (cerebrum, diencephalon

- b)Mid brain (optic lobes)
- c)Hind brain(cerebellum, medulla oblongata).

5. What is the sympathetic nervous system?

Ans. It is formed by the chain of ganglia on both sides of vertebral column and the associated nerves. Thennerves go the organs like heart ,lungs, stomach, intestine, urinary bladder and kidney. It speeds up the functions these organs.

6. What is the parasympathetic nevous system?

Ans. It is formed by the nerves arising from the gaglion of the brain and posterior part of the spinal cord .the nerves arise from the brain goes to the organs like eyes, mouth, salivaryglands. It slows down the functions thes organs.

7. What are the voluntary and involuntary actors?

Ans. The movements under the control of the conscious mind are called voluntary actions. Ex.Running, Eating and Reading.

The movements which are not under the control of the conscious mind are called involuntary actions. Ex.Respiration, Circulation and Digestion.

8. What is feed back mechanism?

Ans. The mechanism which regulates the timings and amounts of the harmones released by the endocrine glands is called feed back mechanism. it is in-built in our body.

9. What is synapse?

Ans. Synapse is the functional region of contact between two neurons, where the information is transferred from one neuron to another.

10. What is apical dominance?

Ans The phenomenon of suppression of the growth of the lateral bud by the terminal bud is called apical dominance.

11. What are tropic movements?

Ans. The movements /responses of individual part s of a plant are subject to stimuli. This tyoe of movements are called tropic movements. Some kind of tropic movements are:

a) Photo tropism: The stems of plants always grow towards the sunlight. This phenomenon is called Photo tropism.

- b) Geotropism: The roots of plants always grow towards the gravitational force(ground). This phenomenon is called Geotropism
- c) Hydrotropism: The roots of plants always grow in the direction of availability of water in the soil. this phenomenon is called Hydrotropism.
- d) Thigmotropism:In creepers the tendrils grow towards the support and wind around them. This type of movement is called Thigmotropism.
- e) Chemotropism:In the process of fertilization in plants,the ripen stigma secretes a chemical substance. The pollengrain response to this stimulus as pollen tubes grow to reach the ovule for the fertilization. This is called Chemotropism.

12. What is nastic movement?

Ans. Sometimes the direction of movement may not be determined by the direction of the stimuli in plants. This type of movement in plants is called nastic movement.

13. What is somatic nervous system?

Ans. The somatic nervous system controls the voluntary movements of the body like the movement of skeletal muscles.

14. What is autonomous nervous system?

Ans.The autonomous nervous system regulates the involutryfuctions of the organs like Heart,stomach and intestine.

15. Why we cannot see anything immediately ,when we enter a dark room?

Ans. When we are in bright light, the diameter of the pupil decreases allowing less light to enter into the eyes. But in the dark room the size of the pupil must be increased to allow more light in. This occurs slowly that's why we can't see any thing immediately.

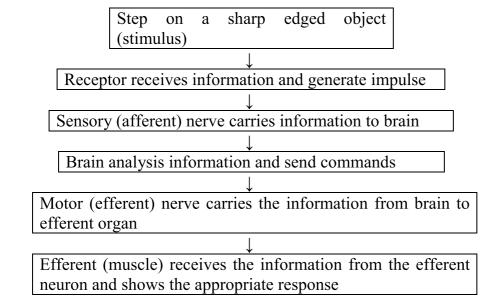
16. What are the kinds of the glands?

Ans. There are two types of glands. They are

- 1.Duct glands:These are also called as exocrine glandsThese release enzymes into their ducts.Ex.liver,Pancreas.
- 2.Duct less glands: These are also called as endo crineglands. These release harmones directly into blood. Ex. pitutory gland, thyroid gland, etc.

2 MARK QUESTIONS

1. Fill in the missing sections in the following flowchart?



2. Distinguish between Afferent and Efferent nerves?

Afferent nerves	Efferent nerves
1. Nerves coming from sense organs are	1.Nerves that carry impulses from brain or
called afferent nerves.	spinal cord are called efferent nerves.
2. These are also called sensory nerves.	2. These are also called motor nerves.
3. Sensory nerves carry information	3.The motor nerves carry impulses from
from sensory organs to brain and spinal	brain or spinal cord to effector organs
cord.	(muscles).

3. Distinguish between Central nervous system and peripheral nervous system?

Central nervous system	Peripheral nervous system
1.It consists of brain and spinal cord.	1.It consists of 43 pairs of nerves.
2.Brain is the vital organ in CNS.	2.It has 43 pairs of nerves, among them 12
Spinal cord pass on the messages and	pairs are cranial nerves and 31 pairs are
also helps in reflex actions.	spinal nerves.
3.I t controls and coordinates all neural	3. These supply information required for the
functions.	movement of the muscles.
4.It is the sight of mental abilities,	4.It only pass on the information.
thinking, memory, reasoning, emotions	ACE CA
and speech.	HE IN SCIEN

4. State whether the following actions are voluntary action, reflex action or conditioned reflex?

- i) Blinking ii) Cleaning the table iii) Playing on the key board. iv) Salivating when food is put in the mouth.v) We close our ears when we hard unbearable sound.
- i) Blinking

- Reflex action

ii) Cleaning the table

- Voluntary action

iii) Playing on the keyboard

- Voluntary action
- iv) Salivating when food is put in the mouth
- Involuntary action
- v) We close our ears when we hear unbearable sound Conditioned reflex
- 5. If you visit a doctor what doubts you would like to clarify about pancreas?
 - 1. Where is pancreas located?
 - 2. Why is called as a mixed gland?
 - 3. What is the roll of pancreas in digestion?
 - 4. What is the enzyme it secrets?
 - 5. What is the hormone it secrets?
 - 6. What are the foods that keep pancreas healthy?
 - 7. What are the exercises to keep pancreas healthy?
 - 8. What are the diseases that occur to pancreas?

6. Collect information the actions controlled by spinal cord by using reference books from your school library?

- 1. Spinal cord is concerned with spinal reflex actions and the conduction of nerve impulses to and from the brain.
- 2. The basic function of the spinal cord is to act as a relay station.
- 3. It receives information from the parts below the head and sends this information to the
- 4. It receives information from brain and sends to other parts of the body.

4MARK QUESTIONS

- 1. Man is the most intelligent animal. What could be the fact that helped us to reach such a conclusion?
 - 1. Man is the most intelligent animal. This is because of his wonderful brain.
 - 2. The greatness of human brain is to analyse a problem and think of a solution.
 - 3. The human brain has aesthetic sense to appreciate poetry, music, painting and the beauty of objects and nature.
 - 4. Another wonderful capacity of human brain is communication through language. No other animal can pass on so much of information through sounds as a human being can.
 - 5. Man has developed the ability, to give a script to the sounds so that all the information he has gathered in his life time is written down and passed on to the next generation. With this skill, humans have become a superior race and rule the planet.
- 2. What procedure you follow to understand the effect of plant growth hormones (in agar medium) in the terminal portion of the tip of stem (coleoptile)? (F.W Went experiment)

Aim: To show the growth of oat coleoptile involves a chemical substance.

Apparatus: Oat seedlings, coleoptile, a slice of agar, a sharp blade.

Procedure:

- 1. Take some seedlings of coleoptile. Cut the tips by using a sharp blade.
- 2. Place the tips on a slice of agar and leave them for an hour. Then the auxin molecules diffused into the agar.
- 3. Cut the agar into small blocks and place a block on one side each stump of the decapitated plants.
- 4. They were kept in the dark during the entire experiment.
- 5. Observe the plant after one hour

Observation: It is observed that a distinct bending away from the side on which the agar block was placed.

Conclusion: It is due to the hormone auxin. This causes assymetric growth of one side of the plant. As a result the plant bend towards light source.

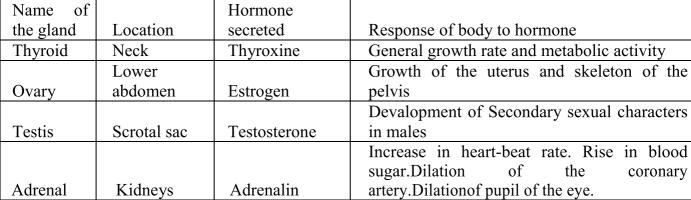
- 3. Observe the diagram and answer the given questions:
- 1. What type of movement is shown in the diagram? Ans. Photo tropism.
- 2. What is the reason for such kind of bending towards the direction of light?

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What is the hormone responsible for this phenomena?

Ans. Auxins.

4. Answer the given questions:





1. what are the Functions of the Thyroxine hormone?

Ans.General growth rate and metabolic activity

2. Hormone secreted by the ovary?

Ans.Estrogen.

3.Growth of hair on face, deepening of voice are the responses of the body to which hormone? Ans.Testosterone.

4. Fuctions of Adrenalinhormone?

Ans. Increase in heart-beat rate. Rise in blood sugar. Dilation of the coronary artery. Dilation of pupil of the eye.

5. Answer the given questions:

Hormones	Uses	
Auxins Cell elongation and differentiation of shoots and roots.		
	Promote cell division, promotion of sprouting of lateral buds, delay	
Cytokinins ageing in leaves, opening of stomata.		
Abscisic acid Closing of stomata; seed dormancy		
Ethylene Ripening of fruit		

1. Functions of the Auxins?

Ans. Cell elongation and differentiation of shoots and roots

2. 'Delay the ageing in leaves' is action of this phyto hormone.

Ans.Cytokinins.

3. Functions of the Abscisicacid?

Ans. Closing of stomata; seed dormancy.

4. Ripening of fruits is the action of this hormone?

Ans. Ethylene.

DIAGRAMS

1. Draw and label the diagram of nerve cell diagram and write few sentences about it (fig: 3, page: 96 of text book)

MULTIPLE CHOICE QUESTIONS

1)	A) Nephron Observe the diagram	B) Neuron C) Nucleus D) Perikaryon and identify the labeled part R	()
	A) Pancreas I			
	C) Gallbladder I	D) Liver		
3)	Identify the mismator	ched one	()
	Group A	Group B		
	1 Ethylene	Ripening of fruit		
	2 Cytokinin	Opening of stomata		

	3 (Gibberellins	S	eed dormancy				
	4.	Abscisic acid	C	ell elongation				
1	A) 1 & 2	B) 1 a	& 3	C) 3 & 4		D) 1,	2, 3 &	& 4
	,	gland : Adrenali		,		, ,	()
• • •	A) E	Estrogen Festosterone	B) Proge		C) Thyrox	in	D)	,
5)		y the correct mate	ching				()
	Na	ame of the horm	one	Role				
	4 A)1-	Adrenalin Thyroxin c, 2-d, 3-a, 4-b	b) Raise c) Mensi d) Activ	in blood sugar trual cycle ity of ovary and	testis 1-d	activity		
6) X	·	b. X- Pitutac. X- Spina	oellum, ary gland, lcord, Y-	Y- Ponsvaroli Y- Carpus calos			()
7)	Stateme Stateme Stateme Stateme A)1 & 2	t the wrong states ent 1: People havi ent 2: Sympathetic ent 3: Thyroxin is ent 4: Starling had 2 are wrong None	ng diabete c nervous also calle l coined th	system inhibit s d fight or flight	ex structures hormone ne.	insulin in		
8)	The tim	ing and amount o	of hormon	es released by en	ndocrine gland	ls is cont	rolled	by the
	A)Flexi	ble mechanism	B) Fetch	ing mechanism			()
9)	C) Futu Role of A)Incre C)Diala)Observe	re mechanism f Adrenalin is ase heart beat ration of the coronal this picture and notropism B)Hy	D) Feed e ary artery identify th	back mechanism B) raise in D) Dialatione phenomena th	blood sugar loon of the pupil	of the e	(

11) Match the followin	α ()			
11)Match the followin				
List A	List E	3		
_	a) Movement towar			
ii Geotropism	b) Movement towar			
• •	<i>'</i>	-		
• •	d) Movement towards Movement towards			
A)i-a, ii-b, iii-c, iv-	·u, v-e	B) i-b, ii-d, iii-a, iv-e, v-c	,	
C) i-c, ii-a, iii-e, iv	y-b, iv-d	D) i-d, ii-b, iii-e, iv-a, v-c		
12) Auxins : Apical do	minance : : Gibberel	llins :	()
A) Parthenocar	py B) Root initi	ation C) Ripening of fru	it D) Seed do	rmancy
13) Identify the name of	of the following diag	gram.	()
	All he			
•		Afferent nerve D) A & C		
14) Match the followin	g.	TO TELLO	()
List A		List B		
i Spinal nerve	14 2 10	a) 12 pairs		
ii Cranial ner	A 30. 3VO	b) 100 m/sec		
iii Peripheral	nerve smission speed	c) 31 pairs d) 43 pairs		
IV INCIVE train	simssion speed	(d) 43 pairs		
A)i-c, ii-a, iii-b, iv-	d	B) i-a, ii-b, iii-c, iv-d		
C)i-c, ii-a, iii-d, iv-	b	D) i-c, ii-d, iii-b, iv-a		
15)Brain is covered by	three layers called		()
A)Pericardium	B) Pleura	C) Meninges	D) Allontoi	S
16)Match the followin	-		()
_	s of the brain	functions		
i Cerebrum		of mental abilities		
ii Diencephal		b Relay center for sensor	_	
iii Cerebellun		c Maintains posture and e	_	:_::4:
iv Medulla ob	olongata	d Center for cardiac and i	respiratory act	ivities
A)i-a, ii-b, iii-c, iv	-d	B) i-d, ii-c, iii-b, iv	v-a	
C)i-c, ii-d, iii-a, iv-	b	D) i-b, ii-c, iii-d, iv	v-a	
17)Secretions of endo	crine glands are know	wn as	()
A)Vitamins	B) Enzymes	C) Hormones	D) Jelly ma	terial

18)Observe the diagram and identify wh	nat does it represents.	()
A)Skoog experiment	B)Went experiment		1. §
C)Yabuta&Sumukhi experiment	D)Darwin experiment		
19)Nervous system in the gut is	<i>)</i> ,, (((
A)Central nervous system	B) Peripheral nervous system		,
C)Autonomic nervous system			
20)The given diagram represents a	· · · · · · · · · · · · · · · · · · ·	()
W. C.	4		
NAME OF THE PARTY			
A)sensory nerve B) Motor nerve	C)Efferent nerve D) B & 0	C	
21)The functional region of contact between	ween two neurons are called	()
A)Dendrites B) Cyton	C) Synapse D) Soma	Ļ	
2) Why cant we see anything when we	enter a dark room?	()
A)Decrease in diameter of pupil B)	Increase in diameter in pupil		
C) Decrease in diameter of cornea	D) Increase in diameter of cornea		
23) The phytohormone that is in gaseou	s state is	()
A)Auxin B) Gibberellin	C) Abscisicacid D) Ethylen	ıe
24)Pollengrains responding to chemical	s is called as	()
A)Geotropism B) Hydrotropism	C) Chemotropism D) Phototropism	n	
25)Excess loss of water in plants is prev	vented by closing of stomata. This is due	to()
A)Cytokinins B) Auxins	C) Abscisic acid D) Gibbe	erellins	
26)The path way of an electric impulse	in neuron is	()
A) Axon terminalsAxon	Cell bodyDendrites		
B) DendritesCell bodyC	ytonAxon terminalaxon		
C) DendritesCell bodyA	xonAxon terminals		
D) AxonCell bodyAxon	terminalDendrites		
27) Why does anger come down?		()
A)Due to the decreasing levels of ad	renaline B) Due to the sugar		
C)Due to the increasing levels of adr	renaline D) None		
28)The region in brain that controls hun	ger signals	()
A)Medulla oblongata B) Dience	ephalon C) Cerbrum D) Cerebellum		
29) gland is known as "I	Master Gland"	()
A)Thyroid gland B) Parathyroid gl	land C)Pitutory gland D) Adrei	nal gland	
30) What are two systems involved and	coordinated various functions in the bod	y? ()
A)Integumentary – Skeletal system	B) Digestive system - Transpe	ort syster	n
C)Nervous system – Endocrine syste			
31) Identify the mechanism shown in th	e following picture.	()
A)Geotropism B)Thigmotropism		`	ŕ
C)Phototropism D)Hydrotropism			
-			

32)The correct pathway in reflex unit is	()
A) ReceptorSensory nerveEffector organMoto neuron	
B) ReceptorSensory nerveIntrer neuronMotor nerveeffector	organ
C) ReceptorMotor nerveInter neuronSensory nerveEffector	organ
D) ReceptorInterneuronSensory neuronMotor neuronEffector	r organ
33) Testis: Testosteron:: Ovary:	()
A)Oestrogen B) Prolactin C) Progesteron D) Abscisic acid	
34. Identify the structure given	()
A)Synkaryon B)Synergids C)Synapse D)Synthetic cell	, ,
35. Luteinizing hormone in females help in ()
A)Ovulation B) Spermatogenesis	
C)Milk production D) Oestrogen secretion	
KEY SHEET:	
1)B 2)A 3)C 4)D 5)C 6)B 7)B 8)D 9)D 10)D 11)C 12)A 13)D	14)C
15)C 16)A 17)C 18)B 19)D 20)D 21)C 22)B 23)D 24)C 25)C 26)C 27)A	28)B
29)C 30)C 31)B 32)B 33)A 34)C 35)A	

6. REPRODUCTION

1MARK QUESTIONS

1. What is fertilsation?

Ans. Fusion of male and female gamets is called <u>fertilization</u>. If fertilization occurs outside the body body of an organism then it is called <u>external fertilization</u>. Ex. Frog and Fish. If fertilization occurs inside the body of an organism then it is called internal fertilization . Ex. Terrestrial animals.

2. What is Pathenogenesis?

Ans. Production of new offspring from female without sexual involvement of male is known as Parthenogenesis. (Female gamete is directly develops into zygote without fertilisation. Seedless fruits are developed by this method. Ex. Water melon, grapes

3. What is tissue culture?

Ans. In this process a few plant cells/tissue are placed in medium with plant harmones.It grow into new plants.

4. What are the accessory glands present in male reproductive system?

Ans . One prostrate gland, two cowper glands.

5. What is ovulation?

Ans. The release of ovum form ovary is called ovulation.

6. What is placenta?

Ans. Placenta is the nourishment tissue formed by the cells of the embryo and mother.

7. What is foetus?

Ans. From the third month of the preganancy, the embryo is called foetus.

8. What is gestation period?

Ans. The total time required for the complete development of embryo is called geststion period. In man it is 280 days.

9. What are the different parts of a flower?

Ans. The reproductive part of a plant is flower ,the reproductive/sexual parts of aflower are Stamens and carpels .Sepals and petals are vegetative parts.Flowers having either stamen (male flowers) or carpel(female flower) are called uni sexual flowers.Ex.Papaya.Flowers having both stamen and carpel are called bisexual flowers.Ex.Datura.

10. What are labour pains?

Ans. The rythemic contractions and relaxations of muscles during delivery are called labour pains.

11. What is pollination?

Ans. The transfer of pollen grains from anther to stigma is called Pollination. If the pollengrains fertilise the ovum of the same flower then it is called self pollination. If the pollengrains fertilise the ovum of different plants of the same group then it is called cross pollination.

12. What is double fertilization?

Ans. The second nucleus of the pollengrain fuses with the polar nuclei and forms the endosperm is called double fertilization.

13. What is interphase?

Ans. The period between two cell divisions is called interphase.

14. What is marriage age?

Ans.It is 18 years for girls and 21 for boys.

15. What is female foeticide?

Ans. It is the act of destruction of female foetus.

16. What are the changes occur in the ovary after fertilisation?

Ans. After fertilization ovary grows as fruit and the ovules forms into seeds.

17. Name the cells which are present in the embryosac?

Ans.Egg cell ,two synergids,three antipodals and one polar nucleus formed by th union of two nuclei.

18. What is vegetative propagation?

Ans.If the off springs are produced from the vegetative parts of plant like root,stem,leaf is called vegetative propagation.

19. What are karyokinesis and cytokinesis?

Ans. Karyokinesis: The division of nucleus.

Cytokinesis: The division of cytoplasm.

2 MARK QUESTIONS

1. Why do fish and frog produce a huge number of eggs each year?

- 1. Fish and frogs are oviparous animals.
- 2. They lay eggs in water which results in external fertilization.
- 3. There is high risk in external fertilization and minimises the chances of fertilization due to external factors.
- 4. If they lay eggs in little quantities, there will be no chance of fertilization. Because some of them may be washed away or become prey to predators.
- 5. Hence, fish and frog lay eggs in a huge number to improve the chances of fertilization.

2. Give examples and explain what is meant by external fertilisation?

- 1. If the fusion of sperm and ova occurs outside the body of the animal, it is called external fertilization.
- 2. External fertilization mostly occurs in aquatic animals like fish and frog.
- 3. The female lays a vast number of eggs in water and male release some millions of sperms on to them in water.

3. Write differences between stamen-carpel?

Stamen	Carpel
1.It is a male reproductive organ of flower.	1.It is a female reproductive organ of flower.
2.It has two parts- anther and filamanet.	2.It has 3 parts – style, stigma and ovary.
3.Stamen produces pollen grains.	3.Carpel produces ovule.
4. Pollen grains contain the male gametes.	4.Ovule contain the female gametes.

4. Write differences between grafting and layering?

Grafting	Layering
1.Two different species of plants are used for	1.Same species of plants is used for plant
plant propagation.	propagation.
2.Stock and scion of two plants are taken	2.No stock and scion are taken. Stem of same
which are attached together and wrapped up.	plant is pulled and inserted into the ground.
3.Plant do not remain attached to parent plant.	3.Plant remain attached to parent plant.

5. What are the advantages of sexual reproduction?

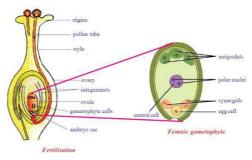
- a. Sexual reproduction promotes diversity of characters in the off springs by providing genetic variation.
- b. Sexual reproduction plays an important role in the origin of new species having different characteristics.
- c. This genetic variation leads to the continuous evolution of various species to form better and still better organisms. All this is not possible in case of asexual reproduction.
- d. Diversity of characters in the new generation give a better chance to adjust or adopt to changing environmental conditions to tolerate diseases, to spread to new areas and increase their population.
- 6. Vicky's father wants to grow a single plant having two desirable characters colourful flowers and big fruits What method will you suggest her and why?
- a. I suggest him to follow grafting method to get the plant with desired characters.
- b. In this method, two plants with desired characters are joined together in such a way that two stems join and grow as a single plant.
- c. From this plant we get two desirable characters.
- 7. What would be the consequences if there is no meiosis in organisms that reproduce sexually?
- a. If meiosis did not occur, fusion of gametes would result in a doubling of the chromosomes for each successive reproduced generation.
- b. This results in formation of abnormalities in each generation. It may leads to the death of the organism.
- c. If meiosis did not occur, there is no genetic variation in the off springs.
- 8. What precautions will you take to keep away from various sexually transmitted diseases?
- a. We should avoid unsafe sexual contacts.
- b. We should avoid using of infected devices.
- c. We should avoid the infected blood transfusion.
- d. We should use condoms and diaphragms which can prevent sexually transmitted deaseces.

4. MARK QUESTIONS

1. Write differences between asexual reproduction - sexual reproduction?

Asexual reproduction	Sexual reproduction		
1.Involves single organism.	1.Involves one or two organisms.		
2.No production of gametes.	2.Male and female gametes are produced.		
3. There is no fusion of gametes.	3.It involves fusion of male and female gametes.		
4.It requires only mitotic divisions.	4.It requires meiotic division followed by mitotic		
	division.		
5.It produces off springs that are identical	5.Off spring will have some characters from male		
to the parent.	parent and others from female parent. Some		
	characters may not be present in either of the		
	parents.		
6.In this chance of genetic variation is only	6.In this reproduction there is more chance for		
through random mutation.	genetic variation.		
7. Asexual reproduction is not very useful	7.Sexual reproduction is highly useful for natural		
for natural selection in evolution of species.	selection in evolution of species.		
8.It occurs by budding, fragmentation,	8.It occurs due to pollination and fertilization.		
sporulation.			

2. Explain the process of fertilisation in plants?



- a. Fertilization is the process of fusion of male and female gametes.
- b. For the fusion of male and female gametes pollen grains have to reach the surface of the stigma. This is called pollination.
- c. Pollen grains received by the stigma germinate and give rise to pollen tubes. Only one pollen tube finally reaches the embryo-sac.
- d. This tube will have two male nuclei, which migrate to the tip of the pollen tube at the time of fertilization.
- e. Usually the pollen tube enters the ovule through micropyle and discharges the two male gametes into its embryo-sac.
- f. One male nucleus (gamete) approaches the egg and fuses with it to form a diploid (2n) zygote. This is first fertilization.
- g. The other male nucleus (gamete) reaches the secondary nucleus (2n) and fuses with it to form endosperm nucleus which will be triploid(3n). This is second fertilization.
- h. Thus double fertilization occurs in embryo-sac which is unique in flowering plants.
- 3. Write the differences in between mitosis and meiosis?

5. Write the differences in between initions and mer	313.
Mitosis	Meiosis
1.Occurs in somatic cells.	1.Occurs in germ cells.
2. Nucleus divides only once.	2. Nucleus divides twice.
3.Two daughter cells are formed.	3. Four daughter cells are formed.
4.Daughter cells are diploid.	4.Daughter cells are haploid.
5.Occurs more frequently.	5.Occurs less frequently.
6. There is only one prophase, one metaphase, one	6.There are two in each phase.
anaphase and one teleophase.	
7.Chromosomes number is not changed in	7.Chromosomes number are reduced by
daughter cells.	half.
8. Chromosomes number doubles at the beginning	8. Chromosomes number is not doubled at
of cell division.	the beginning but it doubles after the end of
	meiosis-I.
9.No crossing over in chromosomes.	9. Crossing over occurs in chromosomes.

- 4. How will you appreciate cell division that helps in perpetuation of life?
- a. Continuation of life starts from cell division.
- b. Cell division is necessary for maintainance and perpetuation of life.
- c. Cell division (mitosis) helps in the replacement of the cells in the skin.
- d. Mitosis also helps in replacing the red blood cells after their life span of 120 days. Without their production there is no carrier of oxygen to the tissues in the body.
- e. Cell division(miotosis) also helps in healing of wounds.
- f. Meotic division is important for the reproduction and propagation of the species.
- g. Crossing over of chromosomes occurs during meiosis division is important for the exchange of genetic information for evolution of species.
- h. Hence we have to really appritiate the role of cell division in the continution of life on the earth.
- 5. Observe the diagram and answer the given questions:

1. Name thee diagram and label it.

Ans: Structure of ovule

- 1.Stigma 2.Style 3.Ovary 4.Ovule 5.Gametophytic cells 6.Embryosac
- 2. Explain the structure with brief note.

Ans.

3. How many ovules are there in the diagram?

Ans:Only one

4. How many nuclei are there in embryo sac? Name them.

Ans: 7,3-Anti podals, 2-synergids, 1-egg, A central cell with two polar nuclei

5. How does double fertilization occur in this diagram?

Ans:One male nucleus fuses with egg cell resulting in the formation of zygote-1st fertilization and the other male nucleus fuses with the secondary nucleus to form endosperm nucleus-2nd fertilization. Thus double fertilization occurs in embryosac.

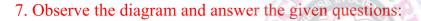
6. Observe the diagram and answer the given questions:

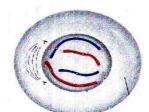
1. What does this diagram indicate? Name the different phases.

Ans: Mitotic cell division diagram, G1 phase, S phase, G2 phase, M phase.

2. What happens if m phase is missed in the cycle.

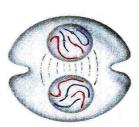
Ans: Mitotic cell division doesn't takes place.











G2

1. Name the above stages process and different stages in it.

Ans: Mitotic cell division, pro phase ,meta phase, ana phase, telo phase.

2. In which stage of it the chromosomes undergo duplication?

Ans: Starts in Prophase and completes in Anaphase.

3. What is the stage in which the chromosomes are attached to spindle fibers and arranged at the equator?

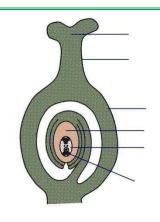
Ans: Metaphase.

4. In which stage the chromatids move towards the poles?

Ans. Anaphase

DIAGRAMS

- **1.** Draw and label the diagram of male reproductive system and write few sentences about it ------fig:13(a), pg:123 of text book.
- **2.** Draw and label the diagram of sperm cell and write few sentences about it ------fig:13(b), pg:123 of text book.
- 3. Draw and label the diagram of female reproductive system and write few sentences about it ------fig:14, pg:124 of text book.



4.	_		and write few sentences	about it
5.	fig:18, pg:127 of text boo Draw and label the diagra fig:22, pg:130 of tex	am of female gametopl	nyte and write few senter	nces about it
MUL'	TIPLE	CHOICE		QUESTIONS
1)		e of asexual reproduction ragmentation Budding	on in yeast. Identify this	process. ()
2)	Sowmya wants to produc	-	n very short interval of ti	me. Suggest her
	the method which help he		anna antenna D) Danthar	()
3)	A) Layering B) Contact Identify the mismatched	-	ssue culture D) Parther	logenesis ()
3)	1) Stolons Straw berry		3) CornColacasia 4) T	Гuber Dahlia
	A) 1, 2 & 3 B) 1		D) 1 & 2	
4)	This symbol is associated A) Science day C) Child rights day	B) Environmental da D) AIDS day	ay and a second	()
5)	Parthenogenesis occurs in	n		()
	A) Bees	B) Ants	C) Wasps	D) All the
6)7)	above Identify the correct seque A) Prophase – Anaphase B) Metaphase – Telophase C) Prophase – Metaphase D) Anaphase – Prophase Identify the correct match	– Telophase – Metaphase – Anaphase – Propha e – Anaphase – Telopha e – Metaphase – Telopha	ase ase	
	Group A	Group B		
	i Stamens	a) Androecium		
	ii Carpel	b) Gynoecium		
	iii Sepals	c) Calyx		
	iv petals	d) Corolla		

A) i-a, ii-b, iii-c, iv-d D) i-b,ii-c, iii-a, iv-d	B) i-d, ii-c, iii-b, iv-a	C) i-c, ii-d, ii	i-b, iv-	a
8) Name the labeled part X in the grant A) CotyledonsC) Radicle	iven diagram. B) Plumule D) Callus		()
x				
9) ART stands forA) Auromycetic retrotherapyC) Acquired retroviral therapy	B) Acute retroviral D) Anti Retroviral		()
10) Arrange the stages of cell cycle of	· ·	тистару	()
1) S phase 2) G2 phase		4) G1 phase		
A) 4,1,2,3 B) 2,3,4,1	C) 4,2,3,1	D) 1,3,4,2		
11)Expand STDA) Social Tribal Development	B) Sexually Transm	nitted Diseases	()
· · · · · · · · · · · · · · · · · · ·				
C) Seasonally Transmitted diseas	IN SC	Diseases		
12)Observe and identify the cell in t A) Ovum B) Sperm C) Endosperm D) Z	he given picture.		()
	descienceguru.bloggi			
13)Red ribbon club educates the peo	ople on		()
A) Hepatitis B) Dengue f	fever C) AIDS	D) Sw	ineflu	
14)Observe this diagram and identif A) Placenta B) Amnion C) Umbilical cord D) Chorion	y the labeled part as Y		()
Y				
15)Rajanna wants to propagate impr his field. Which of the following A) Layering B) Cutting	•	various flowe D) Tissue cul	(fruits in)
16)The correct sequence of the even A) EmbryoSeedFertiliz B) FertilizationPollination C) PollinationFertilization D) FertilizationEmbryo	zationPollination EmbryoSeed EmbryoSeed	plants	()

17) Match the fo	ollowing			()
Grou	ıp A	Group B			
i G1	phase	a) Chromosomes for mit	osis		
ii Spl	hase	b) Cell size increases			
iii G2	2 phase	c) Mitotic cell division			
iv M	phase	d) DNA synthesis			
A) i-a, ii-b, ii-c, iii-b, iv-s	iii-c, iv-d	B) i-c, ii-d, iii-a, iv-b	C) i-b, ii-d, iii-a	, iv-c	D) i-d,
18)Calyx : Prot A) Pollinati C) Fragmen	on	olla : B) Germination D) Fission		()
19)Observe the A) Sporulat C) Karyokir	ion	seeds. It is obtained by the B) Parthenogenesis D) Cytokinesis	process of	_ ()
20) Identify the	mismatched o	ption * SCIENCE IN SCI		()
SN	Propagation	Example			
1	Root	Onion			
2	Rhizome	Ginger			
3	Stolon	Jasmine			
4	Leaves	Bryophyllı	ım		
A) 1	B) 1 & 2	C) 2 & 3	D) 1, 2 & 3		
21)Identify the A) Cutting C) Grafting	B) La D) Ti	yering ssue culture		()
22)The given il A) Multiple		esents the process of B) Budding C) I	Regeneration D	() Binary f) ission
		_,g	, J	, ; 1.	

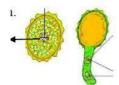
23) Which of the following plan	nts given repro	duces by roots?		()
A) B)	C)	D)			
24) Which of the following par	will turn into	a fruit in the futur	e?	()
A) Seed B) Ova		C) Ovule	D) Stigma	`	ĺ
25) Which of the couple of met	hods are simila	ar and identify the	m?	()
A) Fragmentation – Buddin	g J	B) Regeneration –	Parthenogene	sis	
C) Fragmentation – Regene	ration D) Fiss	ion – Fragmentatio	on		
26)Tarun fell down while play	ing in the play	ground. He was in	jured. Which	process	s is
involved in healing the wou	ınd?			()
A) Meiosis B) Mit	osis (C) Amitosis	D) None		
27) Find out the picture which J	process it repre	esents?		()
A) Grafting B) Lay	ering				
C) Cutting D) Tis	sue culture				
29) Match the fellowing	RCL	E Chi		(`
28) Match the following.	OF DOM	CIEN		()
Part A 1 Endosperi	Part				
1 Endosperr 2 Sperm	b) Diplo	a) Haploid			
3 Egg	c) Hapl				
4 Fertilized	The state	191 49			
7 Termized	cgg djellipi	rus			
A)1-c, 2-b, 3-a, 4-d B) 1-c,	2-a, 3-b, 4-d (C) 1-d, 2-a, 3-c, 4-	b D) 1-b, 2-a,	3-c, 4-	d
29) Which of the following org	anisms show th	ne external fertiliz	ation?	()
	B) Snake & fro		ves & fishes) D)	,
Mammales& fish	B) Shake & II.	05		D)	
30)From the third month of the	nregnancy the	e embryo is called		()
A) Womb B) Fim		C) Foetus		(,
31)The layer formed at 12th w					
		C) Umbilical cord		llantois	S
32)The fertilized egg attached		· ·	ŕ	()
	B) Fertilization		mplantation		
D) Fission	ŕ	,	-		
33)The given picture explains	about the proce	ess of		()
	B) Tissue culti	<u> </u>	6		•
C) Invitrofertilization	D) Fragmentat	tion			
		40000	*		

34) Match the following.			()
Group A	Group B			
1 Cutting	a) Nerium			
2 Layering	b) Rose, Hibiscus			
3 Grafting	c) Water Melon, G	rapes		
4 parthenogenesis	d) Mango, Custard	, Apple ,Rose		
A) 1-a, 2-b, 3-c, 4-d	B) 1-d, 2-c, 3-b, 4-	a C) 1-a, 2-d, 3-c, 4-b	o D) 1-b, 2-a	, 3-d, 4-c
36) What does this diagram in A) Male gametophyte	olactin C) O dicate?	estrogen ophyte	(D) Adrenal () ine)
38)Observe this picture and n A) Copper-R B) Co	bortion C) C	ontraception	s called D) Absorpt (- 1
39) Find out the mismatched p a) Binary fission – Paramo c) Budding – Yeast A) a& b	oecium b) Fragment	tation – Algrae, Fung tion – Planaria C) a, b & c	i D) None)
40)Choose the correct option.	<i>'</i>	c) u, c ec c	()
Statement 1 : In parthenog		ts develop into zygote	e without fert	ilization
Statement 2 : In parthenog	genesis sperms devel	op by the meiotic div	ision	
,	•	C) Both are wrong	D) Both are	e related
41)Identify the type of artific		e figure given	()
· · ·	ayering egeneration			

42) Gynoecium consists of)

- A) Ovary & ovule
- B) Ovary, ovule, style & stigma
- C) Style & stigma
- D) Ovule, Style & stigma
- 43) Identify the labeled part in the given diagram.

- A) Nuclei
- B) Pollen tube
- C) Pollen grain
- D) Stigma

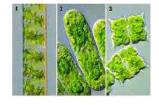


44) Fill in the box.

)

Seminiferous tubules ---- 1 |-----Epididymis----- 2 |-----Ejaculatory duct-----Urethra

- A) 1-Vasdeferentia, 2- Vasa efferentia
- B) 1- Vasa efferentia, 2- Vasadeferentia
- C) 1-Vasa efferentia, 2- Acrosome
- D) 1- Acrosome, 2- Vasaefferentia
- 45)Observe this picture and identify the process in the given picture
 - A) Fission
- B) Budding
- C) Fragmentation D) Sporulation





- 10)A 11)B 12)B 13)C 1)D 2)C 3)C 4)D 5)D 6)C 7)A 8)C 9)D
- 14)D 15)C 16)C 17)C 18)A 19)B 20)A 21)B 22)C 23)C 24)B 25)C 26)B
- 27)C 28)C 29)A 30)C 31)B 32)C 33)B 34)D 35)C 36)B 37)C 38)C 39)D
- 40)A 41)C 42)B 43)C 44B 45)C

7. CO-ORDINATION IN LIFE PROCESSES

1 MARK QUESTIONS

1. Name the two cranial nerves which play an important role in digstion?

Ans. a) 10th Cranial nerve: This nerve is also called as Vagus nerve which send the hunger pangs (signals) to the diencephlon in the fore brain.

b) 5th Cranial nerve: This nerve controls the movement of muscles in the jaw.

2. What are the two kinds of muscles present in the oesophagus?

Ans. The inner layer of oesophagus consists of circular muscles and the oyter layer consists of longitudinal muscles.

3. Name the two harmones which are involved in digestion?

Ans. a) Ghrelin: When the glucose level in the blood falls, the harmone ghrelin is secreted. Due to this harmone the hunger signals are formed and send to the brain.

b)Leptin: When we feel our stomach is full, the harmone leptin is secreted. It supresses the hunger.

4. What is the dental formula of the human beings?

Ans: Inscisors:2/2, Canines:1/1, Premolars:2/2, Molars:3/3.----present at one side of the jaw. Actual number is Inscisors:8, Canines:4, Premolars:8, molars:12.

5. What is mastication?

Ans. Grinding, Chewing and shredding of food in the mouth by teeth is called Mastication.

6. What is peristalsis?

Ans. The involuntry contraction and relaxation of the muscles of oesophagus and stomach and intestine is called peristalsis.

7. What happens if the direction of the peristalsis is reversed?

Ans. If the direction of the peristalsis is reversed the food from stomach comes to the mouth. In human beings due to the reverse peristalsis vomitings occur.

8. What are called Villi?

Ans. The finger like projections of the small intestine are called villi. They increse the rea of absorption. They absob the digested food.

9. What is second brain?

Ans. The nervous system present in the alimentary canal is called second brain/entric nervous system.

10. Write about sphicters present in human digestive system?

Ans. a) Pyloric sphicter: is present at the opening of stomach into the first part of the small intestine (duodenum).It sends the chyme into duodenum.

b)Anal sphincter:is present in anus.It controls the exit of stool from rectum to outside through anus.

11. What stimulates hunger?

Ans. Smell of food, sight of food, need of food stimulateshunger.

12. What is rumination?

Ans. Due the reverse peristalsis in the alimentary canal of Buffalo/Cow the food get back to mouth from stomach. These animals chew it thoroughly. This process is called rumination. And the animals are called ruminants.

13. Write the pathway food in the alimentary canal?

Ans: Mouth \rightarrow buccal cavity \rightarrow pharynx \rightarrow oesophagus \rightarrow stomach \rightarrow smallintestine \rightarrow large intestine \rightarrow rectum \rightarrow anus.

2 MARK QUESTIONS

- 1. What do you mean by hunger pangs?
- a. Hunger pangs are nothing but hunger generating signals that reach the brain from the stomach due to the secretion of a hormone called ghrelin.
- b. When glucose levels in the blood fall, we get hunger pangs in the stomach.
- c. Then ghrelin hormone is secreted from the cells of the stomach wall then hunger contractions start in the stomach.
- d. Hunger pangs continue up to 30 to 45 minutes. Increase of ghrelin levels results in sensation of hunger and motivation to consume food.

2. If we press tongue against the palate we can recognise taste easily. Give reasons?

When the tongue is pressed against the palate, the food substance easily enters into the taste buds. Then the receptors form the taste signals and send to the brain. Finally the taste is recognised by the brain.

3. If glucose level falls in blood we feel hungry. Give reasons?

When glucose levels in the blood fall, we get hunger pangs in stomach. The reason for this is, a hormone called ghrelin is secreted into the blood when the stomach is empty.

- 4. Urination increases when we take lot of fluids. Give reasons?
- a. When we take lot of fluids, the kidneys will efficiently throw out the water by forming more urine than usual.
- b. When there is excess water in the body, the brain usually produces less of a hormone called vasopressin, which in turn causes the kidneys to produce a lot of urine, until excess water is removed.
- 5. Write differences between bolus and chime?

Bolus	Chime
1.Food that is mashed in the mouth.	1.It is partially digested food in the
	stomach.
2.Alkaline in nature.	2.Acidic in nature.
3. Teeth and saliva turn food into bolus.	3.Enzymes and peristalsis movement of
	stomach turn into chime.
4.It is in the form of slurry mass.	4.It is in the form of smooth porridge.
5. Food going from mouth to stomach.	5.Food going from stomach to small
	intestine.

6. What is mastication? Explain the role of different sets of teeth in this process?

Mastication: The grinding, chewing and shredding of food in the oral cavity with the help of teeth is called mastication.

Role of different sets of teeth:

1. There are four types of teeth in human beings. They are incisors (2/2), canines (1/1), premolars (2/2) and molars (3/3) each for a specific function.

- 2. Incisors have sharp edge. They help in biting and cutting of the food.
- 3. Canines have pointed edge. These are used for tearing the food.
- 4. Premolars have blunt and flat surface. They are used for chewing and grinding food.
- 5. Molars have also blunt and flat surface. They are also used for chewing and grinding the food.

7. How is taste and smell related?

- 1. Interactions between the taste and smell enhance our perceptions of food we eat.
- 2. As the olfactory receptors in nose cannot work effectively in cold, we cannot detect the taste effectively.
- 3. If we close our nose while we are eating something we cannot recognize its taste effectively and immediately, because the nose (smell) plays a key role in recognizing the taste of a food.
- 4. So we can say that taste and smell are closely are related.

8. Suggest any two important habitual actions to your friend while eating food, keeping in view of this chapter?

- a. Masticate the food thoroughly in the mouth.
- b. Don't swallow food without chewing properly.
- c. Eat small quantities of food at regular intervals for efficient digestion and absorption of nutrients.
- d. Don't eat food in a hurry and hectic manner.

4.MARK QUESTIONS

1. How can you justify the enteric nervous system as the second brain of the gut?

- 1. The enteric nervous system consists of sheaths of neurons embedded in the walls of our guts which is about 9meter length.
- 2. The intestine developed as a rich score of coordinated movements of its muscular apparatus along with neural apparatus.
- 3. Many researches are going on how the second brain mediates the body's immune response, because 70% of our immune system is aimed at the gut.
- 4. Scientists are working on how trillions of bacteria in the gut communicate with the cell of gut nervous system.
- 5. Enteric nervous system contains the moss of neuron tissue filled with important neurotransmitters.
- 6. Enteric nervous system consists of 100 million of neuron in the walls of digestive tract.
- 7. It stimulates and coordinates the breaking down of food, absorbing nutrients and expelling of waste.
- 8. As it equipped with its own reflexes and senses, it control several gut functions often independently.
- 9. Hence we can justify that the enteric nervous system as the second brain of the gut.

2. Observe the diagram and answer the given questions:

1. What does this diagram indicate?

Ans.Dentition.

2. Name different types of teeth and locate them.

Ans.Inscisors, canines, Pre-molars, Molars.

3. Which set of teeth help in grinding food?

Ans. Pre-molars, Molars.

4. Which set help in tearing food?

Ans.Canines

5. What is dental formula?



Ans. 2,1,2,32,1,2,3 3. Observe the diagram and answer the given questions: 1. What does this diagram indicate? Where is it located? Ans. Schematic diagram of avillus, it is located in small intestine. 2. What are the systems working together in this structure? Ans. Digestive system and Circulatory system. 3. What is the main function of this structure? Ans. To absorb the digested food. 4. What is the reason behind these foldings? Ans. To increase the area of absorption. **MULTIPLE CHOICE QUESTIONS** 1) Sphincter that helps in opening of stomach into duodenum is) A) Cardiac B) Pyloric C) Anal D) Gastric 2) Which of the following is secreted in the stomach?) A)NaCl B) H2SO4 C) HCl D) HNO3 3) The nerve that carries the hunger signals to brain is) A Coronary nerve B) Vagus nerve C) 13th cranial nerve D) 8th cranial nerve 4) Dental formula of man is B) 2/2, 1/1, 1/1, 2/2 C) 2/2, 2/2, 1/1, 1/1 D) 2/2, 1/1, 2/2,3/3 A)2/2, 1/1, 2/2, 1/1 5) Who conducted experiments on conditional reflexes? B) Ivan Pavlov C) Willium Harvey D) Priestly A)IvonMechan 6) The long teeth present in the carnivores are C) Molars D) Premolars A)Incisors B) Canines 7) The receptors which send signals of smell to the brain are) A)Chemoreceptors B) Olfactory receptors C)Optic receptors D) tactile receptors 8) When the _____ level in the blood fall, we get hunger pangs.) A)Glucogen B) Plasma C) Salt D) Glucose 9) The hormones which suppress the hunger is) B) Ghrelin D) Secretin A)Leptin C) Gastin 10) Saliva PH nature is) D) None A)Acid B) Base C) Neutral 11) Glucose level in the blood is maintained by the) B) Digestive system A)Circulatory system C)Endocrine system D) Excretory system 12) cranial nerve has been found to control the movement of muscles in the jaw.() A)Vagus B) 5th C) 6th D) 7th 13) The number of salivary glands present in the mouth are) B) 3 Pairs A)5Pairs D) 2 Pairs 14) This counters the action of acid in the stomach () A)Lining of villi B) Lining of mucus C)Lining of hair D) Lining of epithelium 15) Secretion of saliva is under the action of) A)Central nervous system B) Peripheral nervous system C) Autonomous nervous system D) None of the above 16) Under which situation we can taste quickly?

	00118181818		1 (7)		D) C-4	(
A) Tiger	a.C.441	_	el C)		D) Cat	1
			sugarcane ar			(
•	sors	*	*	Premolars	D) Molars	(
				represents		(
A) Insciss		*	s C)		D) Molars	(
			las		nama D) Ontia n	(
Ť.			_	C) Fluctiory	nerve D) Optic n	erve
21)Thegiven	_	_				(
• •	-	B) Muscle	-		SI	
· ·	-	D) Cardia	c spincter			(
22)Match the	Part		n	art B		(
1		cretion		art D		
2		nial nerve	b) Sound			
3	Auditory		c) Mucus			
3	Auditor.		200			
4	Olfactory	v nerve	di Vagus	nerve		
23)Smell : O	lfactory n	c B) 1-b, 2-c	ıt:	1-c, 2-d, 3-b, 4-a	D) 1-c, 2-b, 3-d, 4	1-a (
A) 1-a, 2- 23)Smell : O A) Optic	d, 3-b, 4-d lfactory n	c B) 1-b, 2-c	d, 3-c, 4-a C) at: Abdusence no	1-c, 2-d, 3-b, 4-a	D) 1-c, 2-b, 3-d, 4	4-a (
A) 1-a, 2-23)Smell : O A) Optic C) Triger 24) Identify	d, 3-b, 4-d lfactory n nerve ninal nerv	erve : : Sigh B) Audito	d, 3-c, 4-a C) Abdusence nory nerve	1-c, 2-d, 3-b, 4-a erve		4-a (
A) 1-a, 2-23)Smell: O A) Optic C) Triger 24) Identify A) Villus	d, 3-b, 4-d lfactory n nerve ninal nerv the structu B) Ve	erve : Sigh B) Audito are given wheector C)	d, 3-c, 4-a C) Abdusence no ory nerve nich enlarges Alveoli D)	1-c, 2-d, 3-b, 4-a erve the surface area in Venus		4-a (
A) 1-a, 2-23)Smell: O A) Optic C) Triger 24) Identify A) Villus 25)The last p	d, 3-b, 4-d lfactory n nerve ninal nerv the structu B) Ve	erve : : Sigh B) Audito are given wheector C) Alarge intesti	d, 3-c, 4-a C) Abdusence nory nerve nich enlarges Alveoli D) ine is	1-c, 2-d, 3-b, 4-a erve the surface area in Venus	n small intestine	1-a (
A) 1-a, 2-23)Smell: O A) Optic C) Triger 24) Identify A) Villus 25)The last p A) Duode	d, 3-b, 4-d lfactory n nerve ninal nerv the structu B) Ve part of the	erve::Sigh B) Audito are given wheetor C) large intesti	d, 3-c, 4-a C) Abdusence nory nerve nich enlarges Alveoli D) ine is Appendix	the surface area in Venus C) Rectum		1-a (
A) 1-a, 2-23)Smell: O A) Optic C) Triger 24) Identify A) Villus 25)The last p A) Duode 26)Hard mas	the structure B) Vector of the enum	erve: Sigh B) Audito are given wheetor C) large intesti B) matter is sto	d, 3-c, 4-a C) Abdusence no ory nerve nich enlarges Alveoli D) ne is Appendix ored in	the surface area in Venus C) Rectum	n small intestine D) Anus	4-a (
A) 1-a, 2-23)Smell: O A) Optic C) Triger 24) Identify A) Villus 25)The last p A) Duode 26)Hard mas A) Jejunu	the structure B) Vector of the enum as of fecal am	erve :: Sigh B) Audito are given wheetor C) A large intesti B) A matter is sto	d, 3-c, 4-a C) Abdusence no ory nerve nich enlarges Alveoli D) ine is Appendix ored in C)	the surface area in Venus C) Rectum Rectum	n small intestine D) Anus D) Anus	1-a (
A) 1-a, 2-23)Smell: O A) Optic C) Triger 24) Identify A) Villus 25)The last p A) Duode 26)Hard mas A) Jejunu 27)Lahari is	the structure B) Vector of the enum as of fecal am suffering	erve::Sigh B) Audito are given wheetor C) large intesti B) matter is sto B) Ileum from the ind	Abdusence nory nerve aich enlarges Alveoli D) ane is Appendix ored in C) digestion What	the surface area in Venus C) Rectum	n small intestine D) Anus D) Anus	1-a (((((
A) 1-a, 2- 23)Smell: O A) Optic C) Triger 24) Identify A) Villus 25)The last p A) Duode 26)Hard mas A) Jejunu 27)Lahari is A) fibre r	the structure B) Very oart of the enum as of fecal am suffering ich food	erve: Sigh B) B) B) Compared by B) B) Compared by B) Compared by B) Compared by Compared b	d, 3-c, 4-a C) Abdusence nory nerve nich enlarges Alveoli D) ne is Appendix ored in C) digestion What Oil rich food	the surface area in Venus C) Rectum Rectum at type of food he	n small intestine D) Anus D) Anus	4-a (((((
A) 1-a, 2- 23)Smell: O A) Optic C) Triger 24) Identify A) Villus 25)The last p A) Duode 26)Hard mas A) Jejunu 27)Lahari is A) fibre r	the structure B) Vector of the enum as of fecal am suffering	erve: Sigh B) B) B) Compared by B) B) Compared by B) Compared by B) Compared by Compared b	Abdusence nory nerve aich enlarges Alveoli D) ane is Appendix ored in C) digestion What	the surface area in Venus C) Rectum Rectum at type of food he	n small intestine D) Anus D) Anus	4-a (
A) 1-a, 2-23)Smell: O A) Optic C) Triger 24) Identify A) Villus 25)The last p A) Duode 26)Hard mas A) Jejunu 27)Lahari is A) fibre r C) Proteir	the structure B) Version of the enum suffering sich food in rich food	erve::Sigh B) Audito are given wheetor C) large intesti B) matter is sto B) Ileum from the ind B) O	d, 3-c, 4-a C) Abdusence nory nerve nich enlarges Alveoli D) ne is Appendix ored in C) digestion What Oil rich food	the surface area in Venus C) Rectum Rectum at type of food he	n small intestine D) Anus D) Anus	4-a (
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A) 1-a, 2- 23)Smell: O A) Optic C) Triger 24) Identify A) Villus 25)The last p A) Duode 26)Hard mas A) Jejunu 27)Lahari is A) fibre r C) Protein 28) Observe A) Relaxe	the structure B) Very oart of the enum suffering sich food in rich food the diagrated muscle	erve::Sigh B) B) B) Be D) Audito Are given where the control of t	at: Abdusence nory nerve nich enlarges Alveoli D) Ine is Appendix Ored in C) Cligestion What Oil rich food Fats rich food	the surface area in Venus C) Rectum Rectum At type of food he design at N. In N. D) Stomach	n small intestine D) Anus D) Anus lps her?	4-a (((((((((((((((((((

30) Which of the following tee	th are present	in humans and abs	ent in herbivores?	()
A) Inscisors B) Ca	nines	C) Premolars	D) molars		
31) Small intestine is long and	d coiled struct	ure. Why?		()
A) Enhancing food absorp	tion	B) Eliminating the	e waste material		
C) To get the more water a	and salts	D) To conduct filt	ration		
32) Which part of the brain con	ntrols the exha	alation and inhlation	n activities in resp	iration?	
				()
A) Cerebrum	B) Cerebellu				
C) Medulla oblongata	D) Dienceep	halon			
33) Observe this diagram and	l identify the s	substance which mo	oves from oesopha	igous to	
stomach.	,		()	
A) Bonus B) Bolus	C) Stool	D) Saliva	•	,	
34) Match the following.	,	,	()	
Type of teeth	Total num	ıber			
1) Inscisors	a) 8	TE O			
2) canines	b) 4	N SCT			
3)Premolars	c) 8	J. 69 15			
4) Molars	d) 12				
A) 1-c, 2-d, 3-b, 4-a	A THE VO	B) 1-a, 2-	-b, 3-c, 4-d		
C) 1-a, 2-d, 3-b, 4-c	Ologyte Science	D) 1-c, 2	-a, 3-b, 4-d		
35)Lakshmi is sleeping during	g day time wh	en she salivate. Wh	ny? ()		
A) Nocturnality is conne	cted to salivat	tion during napping	·		
B) Diurnality is connected	ed to salivation	n during napping			
C) Nocturnalyty is conne	ected to digest	tion during napping			
D) Diurnality is connected	ed to ingestion	n during napping			
36) Which of the following sit	uation is corre	ect you can taste im	mediately()		
A) Put sugar solution on	tongue				
B) Put sugar crystals on	tongue				
C) Swallow directly with	out grinding	& shredding			
D) Press the tongue slow	ly against the	palate			
KEY SHEET:					
					

6)B

5)B

1)B

2)C

3)B

4)D

7)B

14)B 15)C 16)C 17)C 18)B 19)B 20)B 21)C 22)C 23)A 24)A 25)C 26)C

8)D

9)A

10)B 11)C 12)B 13)B

8. HERIDITY

1 MARK QUESTIONS

1. What is Genetics?

Ans. The branch of science that deals with the study of heredity and variations in chacters is called Genetics.

2. What are heredity and inheritance?

Ans. Transmission of characters from parent to offsprings is called Heredity.the process in which characters are passed from one generation to another generation is called inheritance.

3. What is F1 generation?

Ans. F1 generation means off springs of first generation parents.

4. What are genes?

Ans. Genes are the factors which are responsible for characters of an off spring.

5. What are autosomes and allosomes?

Ans. The non-sex determining chromosomes are called autosomes. These are 22 pairs in human beings. Sex determining chromosomes are called allosomes. There are one pair of allosomes in human beings.

6. What are pure breeds?

Ans. The plants that express a selected character over several generations are called pure breed for that character.

7. What is Law of Dominance?

Ans. Among apair of alleles for a character only one express itself in the first generation. One of the allele is dominant over the other. This is called Law of Dominance.

8. What is Law of Segregation?

Ans. Only one of two facters for a character will pass randomly from parent to off spring. This is called Law of Segregation.

9. What is law of Independent Asortment?

Ans. Allele pairs separate independently during the formation of gamets. This means theat the traits are transmitted to pff spring independently of one another. This is called law of Independent Asortment.

10. What is Genetic drift?

Ans. Sometimes accidents changes the frequency of genes in small populations. This is known as Genetic drift. Due to this Fenetic drift the changes in the characters will be occurred.

11. What is Inheritance of acquired characters?

Ans. The characters that developed during the life time of an organism are called Inheritance of acquired characters. These characters are passed to its off springs .Lamarck proposed it as theory of Inheritance of acquired characters.

12. What is meant by 'Survival of the Fittest'?

Ans. Nature favours only use ful variations. Each species tends to produce large number of off-spring . They compete with each other for food, shelter, mating and other needs. In this struggle for existence, only the fittest can survive this is called "Survival of the Fittest".

13. What are homologous organs? And what is Divergent Evolution?

Ans. The organs which are structurally similar but functionally different are known as Homologous organs. This type of Evolution is called Divergent Evolution.Ex.Fore limbs of a Whale and fore limbs of a Bat.

14. What are analogous organs? And what is Convergent Evolution?

Ans. The organs which are structurally different but functionally similar are called Analogous organs. This type of Evolution is called Convergent Evolution.Ex.wings of Bats and Birds.

15. What is Embryology?

Ans. The brach of science that deals with the study of development of an organism from egg to adult stage is called Embryology.

16. What are fossils? And what is Palaeontology?

Ans. Fossils are evidences of ancient organisms. The study of fossils is called palaeontology.

17. What are Vestigial organs?

Ans. The organs which are not useful in an organism are called Vestigial organs.

18. What are the characters selected by Mendal for his experiments on Pea plants?

Ans. 1.Flower colour (Purple – White),

- 2. Folwer position (Axial Terminal),
- 3. Seed colour (Yellow Green),
- 4. Seed shape (Round Wrinkled),
- 5. Pod colour (Green Yellow),
- 6. Pod shape (Inflated Constricted),
- 7. Stem length(Tall Dwarf).

19. How can you say that 'Human being is a moving museum of Vestgial organs?

Ans. There are nearly 180 vestigial organs are present in Human beings ,like pinna,hair on skin,mammary glands in man. That's why human beings said to be a moving museum of Vestgial organs.

2 MARK QUESTIONS

- 1. What are variations? How they help organisms?
- a. Differences in characters within very closely related groups of organisms are called variations.
- b. A new character may lead to variations that are closely inherited.
- c. These variations help the organisms to adopt to their environments.
- d. These variations increase the survival chance of the organisms.
- e. These variations lead to origin of new species.
- 2. If the theory of inheritance of acquired characters proposed by Lamarck was correct how the world will be?

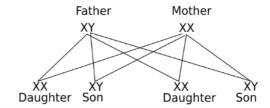
If the theory inheritance of acquired characters proposed by Lamarck was correct,

- a. The organisms which lost some of their body parts should give birth to the off spring without the lost parts.
- b. The rats which lost their tail give birth to tail less rats.
- c. A body builder's children should be body builder and a painter children should be painter.
- d. But all these are not happening because bodily changes will not be passed to its off spring.
- 3. Collect information on the inherited traits in your family members and write a note on it?
- a. My grandfather and father had curling hair. I too have curling hair so it is an inherited trait in my family.
- b. My mother and me both have long noises which appears similar. It is another inherited trait.
- c. Eyes of my grandmother, my brother and mine are similar it is another inherited trait.

d. Ear lobes of my father, brother and mine are similar. This in another inherited tarit.

4 MARK QUESTIONS

- 1. How sex determination takes place in human? Explain with example.
- a. Eachhumancell contains 23 pairs of chromosomes. Out of these 23 pairs, 22 pairs are autosomes. The remaining 1 pair is allosomes or sex chromosomes. These sex chromosomes decide the child sex.
- b. There are two types of sex chromosomes "X" and "Y".
- c. The female gametes (ovum) have "XX" chromosomes.
- d. The male gametes (sperm cell) have "XY" chromosomes.
- e. If the sperm cell carries "X" Chromosomes fertilizes the ovum (X-chromosomes), the baby will have "XY" chromosomes. So the baby will be a boy.
- f. If the sperm cell carries "X" chromosomes fertilizes the ovum (X chromosomes), the baby will have "XX" chromosomes. So the baby will be a girl.
- g. So, the gametes produced by the male is the deciding factor for the sex determination.



2. Explain the Darwin's theory of evolution 'Natural selection' with an example?

- a. Darwin proposed the theory of "natural selection". According to this theory nature only selects which organism should survive or perish in nature. The organisms with useful traits will survive these organisms having harmful traits will be eliminated from its environment.
- b. Let us consider, the red beetles and green beetles are living on the green leaves of the bushes and these are prey to crows.
- c. The crows can't see the green beetles on green leaves and they cant eat them.
- d. But crows can sees red beetles and eat them.
- e. As a result there are more and more green beetles than red ones.
- f. The variation of color green gave a survival advantage to green beetles. In other words it was naturally selected.
- 3. Male is responsible for sex determination of baby do you agree? If so write your answer with a flow chart.
- a. Yes I agree with this statement.
- b. Eachhumancell contains 23 pairs of chromosomes. Out of these 23 pairs, 22 pairs are autosomes. The remaining1 pair is allosomes or sex chromosomes. These sex chromosomes decide the child sex.
- c. There are two types of sex chromosomes "X" and "Y".
- d. The female gametes (ovum) have "XX" chromosomes.
- e. The male gametes (sperm cell) have "XY" chromosomes.
- f. If the sperm cell carries "X" Chromosomes fertilizes the ovum (X-chromosomes), the baby will have "XY" chromosomes. So the baby will be a boy.
- g. If the sperm cell carries "X" chromosomes fertilizes the ovum (X chromosomes), the baby will have "XX" chromosomes. So the baby will be a girl.
- h. So, the gametes produced by the male are the deciding factor for the sex determination.
- 4. Write a brief note on analogous organs.
- a. The organs which are structurally different but functionally similar are known as "analogous organs".
- b. Wings of birds and bats are the example for analogous organs.

- c. The wings of bats are skin folds stretched between fingers.
- d. But the wings of birds are a feathery covering all along the arm.
- e. The designs of the 2 wings, and their structure are different. But they have common use for flying. This type of evolution is called convergent evolution.

5. Observe the diagram and answer the given questions:

1. What does this diagram indicate?

Ans. Checker board of monohybrid cross.

2. To what generation do this belong?

Ans. F2 Generation.

3. What is the phenotypic ratio in this board? Ans.3:1.

4. What is the genotypic ratio in this board? Ans.1:2:1.



1. What does this flow chart regard to?

Ans. Sex determination in Human beings.

2. Who decides the sex of the baby? – mother or father? Ans. Father



4. Are all the traits of baby similar to that of its parents? Ans. No.



MULTIPLE CHOICE QUESTION

- 1. Transmission or passing of characters or traits from parent to progeny
 - A) Evolution
- B) Inheritance
- C) Heridity
- 2. Diopithicus -> Ramopithicus-> 1-> Homohabilus-> 2 -> Homoneanderthalensis

What do 1 & 2 represent?

- B) 1-Astrolopithicus, 2-Homosapien
- A) 1-Homo sapien, 2-Modern man C) 1-Homosepiens, 2-Homoerectus
- D) 1-Astrolopithicus, 2-Homoerectus

3. Match the following.

Part A		Part B
-	` -	_

- 1 Homozygous
- a) Ry, Rr
- Heterozygus

- b) 3:1
- 3 Phenotypic ratio 4 Genotypic ratio
- c) YY, RR
- A)1-b, 2-c, 3-a, 4-d
- d) 1:2:1
- B) 1-a, 2-b, 3-c, 4-d C)1-c, 2-a, 3-b, 4-d D) 1-a, 2-d, 3-b, 4-c
- 4. This is a connection link between reptiles and aves. Identify the name of the that connecting link.
 - A)Autopteryx
- B)Amniopteryx
- C)Archeopteryx
- D)Allopteryx

)

)

)

5.	Observe the figure.	These are the	biggest anin	nals on the land wh	ich were present le	ong			
	time ago. Find out t A) Archeopteryx C) Rhodosaur	B) Dinosaur	r			()		
6.	How many vestigia		()					
	A) 100	B)160	C)180	D) 280					
7.	He was the first person to propose the "The theory of evolution. and also coined the term								
	"Biology" along with Treviranus. Who is he?								
	A)Charles Darwin C) Jean Baptist Lan								
8.	Statement 1: Homo	logous organs	are structura	ılly similar but func	tionally different.	•			
	Statement 2: Analo		re functional	y similar but struct	urally different				
	Choose the right op		(C) D	(1 - 11 - D)	D . d	()		
0	A) 1 is right Homologous organs	B) 2 is right		oth are right D)	•	(`		
Э.	A) Concrete evoluti	- // //	nvergent evo			()		
	C) Chronic evolution			A					
10	Externally visible of	100		*		()		
	A) Genotype	B) Phenotyp		enophenotype	D) Phenogeno	otype	,		
11	Observe this picture			D A //	, 2	()		
	A) Cheetah-1, Man B) Man-1, Cheetah- C) Whale-1, Man-2 D) Man-1, Whale-2	-2, Whale-3, E c, Cheetah-3, E	Bat-4 Bat-4						
12	. Who proved that be	odily changes	are not inher	rited?		()		
	A) Charles Darwin	<i>'</i>	ssel Wallace	C) August Weisi	nan D) Lar	nark			
13	. Match the following	_				()		
	2 T 3 A	Part A harles Lyell A.R. Malthus Alfred Russel V ean Lamark	b) A Vallace c) Pr	Part B atural selection cquired characters inciples of geology opulation growth in	geometrical prog	gressio	n		
	A) 1-d, 2-b, 3-c, 4-c	d		B) 1-c, 2-d, 3-a,	4-b				
	C) 1-d, 2-c, 3-b, 4-a	ı		D) 1-b, 2-a, 3-c,	4-d				
14. Who wrote the famous book "The origin of Species" ()									
17	A) Charles Darwin		nn Lamark	C) T.R. Malthus	D) Charles Ly	yell	J		

15. Father of genetic A) Aristotle	CS 1S			
A) Aristotie		Slamming C) Cuana Mandal	D) I amanla	
· · · · · · · · · · · · · · · · · · ·	*	Clemming C) Gregor Mendal	D) Lamark	
		represented as	D) Footumes	
17. Find the mismat	B) Factors	C) Symptoms	D) Features	
	•	ra I I amarak	(
· ·	of acquired character			
, -	ecies – Maurice Wilk			
*	DNA – Francis Crick			
,	heritance in Drosop	C	(
_		es in small population is called		
·	B) Genetic drift		D) Genome	
	evidences of ancient l		<i>D</i>) M :	
A) Embryos	· ·	C) Specimens	· ·	
	_	ter, then it is said to be		
	· · ·	idizygous C) Heterozy		
		the other". This is known as	· · · · · · · · · · · · · · · · · · ·	
		3) Law of indeopendent assortm	nent	
) Law of genetic drift		
22. Each parent pass	ses a randomly selec	eted copy of only one of the alle	ele to an offspring. T	hi
law is known as		SCE O	(
A) Law of gene	frequency	B) Law of independent as	ssortment	
C) Law of domi	nance	D) Law of segregation		
23. In the inheritance	ce of more than one p	pair of characters, the factors for	or each pair of	
		y of the other pair. This law is	known as (
A) Law of domo	oinance	B) Law of segregation D) Law of speciation		
C) Law of indep	endent assortment	D) Law of speciation	*	
24. Observe the tabl	le which represents t	the genotypic ratio is	P Y Y	
			Y YY Yy	
A) 1:3:1 B)	1:3:1:3			
A) 1:3:1 B) C) 1:2:1 D)			y yY yy	
C) 1:2:1 D)) 3 : 1 : 3	giraffe are the examples for the	y yY yy	
C) 1 : 2 : 1 D) 25) Elongation of 1) 3 : 1 : 3	-	y yY yy e theory of (
C) 1 : 2 : 1 D) 25) Elongation of 1	neck & forelimbs of acquired characters	_	y yY yy e theory of (ritance	
C) 1:2:1 D) 25) Elongation of 1 A) Inheritance o C) Natural selec	neck & forelimbs of acquired characters	B) Sex linked inhe D) Germ plasm the	y yY yy e theory of (ritance	
C) 1:2:1 D) 25) Elongation of 1 A) Inheritance o C) Natural selec	neck & forelimbs of of acquired characters tion of new species is known	B) Sex linked inhe D) Germ plasm the	y yY yy e theory of (ritance eory (
C) 1:2:1 D) 25) Elongation of 1 A) Inheritance o C) Natural select 26) The formation of A) Speciation	neck & forelimbs of of acquired characters of new species is known B) Genetic drift	B) Sex linked inhe D) Germ plasm the	y yY yy e theory of (ritance eory (& & C	
C) 1:2:1 D) 25) Elongation of (A) Inheritance of (C) Natural selection (A) Speciation	neck & forelimbs of of acquired characters of new species is known B) Genetic drift	B) Sex linked inhe D) Germ plasm the own as C) Macro evolution D) A	y yY yy e theory of (ritance eory (& & C	ce
C) 1:2:1 D) 25) Elongation of a A) Inheritance o C) Natural selec 26) The formation o A) Speciation 27) Weak deer can	neck & forelimbs of of acquired characters of new species is known B) Genetic drift	B) Sex linked inhe D) Germ plasm the own as C) Macro evolution D) A	y yY yy e theory of (ritance eory (& & C	ce
C) 1:2:1 D) 25) Elongation of 1 A) Inheritance o C) Natural select 26) The formation of A) Speciation 27) Weak deer cannot it represents?	neck & forelimbs of of acquired characters of new species is known B) Genetic drift not live long time In	B) Sex linked inhe D) Germ plasm the own as C) Macro evolution D) A	y yY yy e theory of (ritance eory (& C principle. What cond	
C) 1:2:1 D) 25) Elongation of a A) Inheritance o C) Natural select 26) The formation o A) Speciation 27) Weak deer cannot it represents?) A) Evolution B)	neck & forelimbs of of acquired characters of new species is known B) Genetic drift not live long time In	B) Sex linked inhe D) Germ plasm the own as C) Macro evolution D) A a forest according to Darwin.s	y yY yy e theory of (ritance eory (& C principle. What cond	or
C) 1:2:1 D) 25) Elongation of r A) Inheritance o C) Natural select 26) The formation of A) Speciation 27) Weak deer cannot it represents? A) Evolution B) 28) Shruthi told, "Control of the control of t	neck & forelimbs of of acquired characters of new species is known B) Genetic drift not live long time In Acquired characters organisms compete services and the services of	B) Sex linked inhe D) Germ plasm the own as C) Macro evolution D) A a forest according to Darwin.s C) Survival of the fittest with one another for their food	y yY yy e theory of (ritance eory (& C principle. What cond	or
C) 1:2:1 D) 25) Elongation of 1 A) Inheritance o C) Natural select 26) The formation of A) Speciation 27) Weak deer cannot it represents?) A) Evolution B) 28) Shruthi told, "Control of the control of	neck & forelimbs of of acquired characters of new species is known B) Genetic drift not live long time In Acquired characters organisms competed resembles the theory	B) Sex linked inhe D) Germ plasm the own as t C) Macro evolution D) A a forest according to Darwin.s C) Survival of the fittest with one another for their food	e theory of (ritance eory & C principle. What cond D) Speciation, space, reproduction	or ı."
C) 1:2:1 D) 25) Elongation of a A) Inheritance o C) Natural select 26) The formation o A) Speciation 27) Weak deer cannot represents? A) Evolution B) 28) Shruthi told, "C This statement of the control of the contro	neck & forelimbs of of acquired characters of new species is known B) Genetic drift not live long time In Acquired characters organisms compete resembles the theory B) Struggle for	B) Sex linked inhe D) Germ plasm the own as C) Macro evolution D) A a forest according to Darwin.s C) Survival of the fittest with one another for their food	e theory of (ritance eory & C principle. What cond D) Speciation, space, reproduction	or ı."
C) 1:2:1 D) 25) Elongation of 1 A) Inheritance o C) Natural select 26) The formation of A) Speciation 27) Weak deer cannot it represents?) A) Evolution B) 28) Shruthi told, "Control of the control of	neck & forelimbs of of acquired characters of new species is known B) Genetic drift not live long time In Acquired characters organisms compete resembles the theory B) Struggle for	B) Sex linked inhe D) Germ plasm the own as t C) Macro evolution D) A a forest according to Darwin.s C) Survival of the fittest with one another for their food	e theory of (ritance eory & C principle. What cond D) Speciation, space, reproduction	or ı."

30. Differences	in the cl	haracte	rs with	in very	closel	y relate	d grou	ps of o	rganisn	ns Are	refferd	l as
	<u>.</u>			·							()
A) Evolution	1	B) Va	riation	S		C) Mu	ıtations	5	D) Mi	igration	ıs	
31. S: Nature fa	vours o	nly use	eful vai	riations	.							
T: Only the	fittest ca	an surv	ive.									
Find out the	correct	ones									()
A) S is right	& T is	wrong	B) S i	s wron	g & T i	s right	C) Bo	th are	right I	O) Both	are w	rong
32. Tad pole of						e frog.	What d	oes it i	ndicate	?	()
A) Frogs are												
B) Frogs are												
C) Frogs are												
D) Frogs are					tortoise	•					(`
33. Autosomes :	_										()
A) 22 pairs	, .		C) 2 p		D) 23		1_1	1	0		(`
34. All organism				mon ar							()
A) Similariti			•			nilariti milariti		•				
C) Difference 35. Which of the			•	- a vecti	/						(`
A) External		_	ir on sl		_	ammary		_		Cochl	(An	,
36. The sudden					20		y gianu	5 111 1116	ne D)	Cociii	Ca ()
A) Evolution			eciation			utation		D) Ge	eneratio	m	(,
37. Match the fo			cciatio	SEF	C) WI	lation		<i>D)</i> GC	ncianc	711	()
	art A	·•		*	Part 1	R S					(,
	erm – Fa	actor	43	10°C		gor Me	ndel					
	ex of the		depend	ls on		N 0 /						
	ather of			escience	c Fath							
	Factors	•										
A) 1-d, 2-c,							8-d. 4-b	D) 1-0	1. 2-a. ³	3-b. 4-c	;	
38. Homo erect							 ,	2)1	.,, .	, o, . .	()
A) Homo ne												,
B) Homo ha												
C) Modern r												
D) Homo ha	bilus &	Mode	rn man	76								
39. The process	of inhe	ritance	e of mo	re than	one pa	ir of cl	naractei	s inde	penden	tly is kı	nown a	as
Law of											()
A) Independ	ent asso	ortmen	t	B) Do	minan	ce	C) seg	gregatio	on	D) No	one	
KEY SHEE	<u>T:</u>											
1)C 2)D	3)C	4)C	5)B	6)C		8)C			11)B		13)B	
14)A 15)C												
27)C 28)B	29)D	30)B	31)C	32)A	33)B	34)A	35)D	36)C	37)C	38)A	39)A	

9. OUR ENVIRONMENT

1 MARK QUESTIONS

1. What is biosphere?

A. The life supporting Zone on the earth is called as biosphere.

2. What is food chain?

A. Food chain is a pathway that shows how energy is passed from one orgnism to another. It shows who eats what in a particular habitate. It is drawn connecting the pictures or names of organisms by putting arrows between them.

3. What is Food web?

A. The elaborate interlinked feeding relationships in an ecosystem is called food web. Many of the food chains in an eco system are cross linked to form a Foodweb.

4. What is Niche?

A. The term niche denotes the animal position in the food web, what it eats and also denotes its mode of life.

5. What is Eco- System?

A. Eco system is a basic unit of nature. It is made up of biotic and abiotic components. All these components are inter dependent. Forest, pond, sea, desert, and mangroves are different ecosystems.

6. What is ecological Pyramid?

A. The graphic presentation of the feeding level of an Eco system by taking the shape of a pyramid is called ecological pyramid. It is a type of representation which show flow of energy from one tropic level to another. It was first introduced by Charles Elton in 1927.

7. How many types of ecological pyramids are there?

A. There are 3 types of ecological pyramids. They are 1. Pyramid of number 2. Pyramid of biomass 3. Pyramid of energy.

8. What is pyramid of number?

A. it is a graphic representation designed to show the number of organisams at each tropic level in an ecosystem is called pyramid of number.

9. What is pyramid of biomass?

A. A graphic representation designed to show the quantity of livning matter at each tropic level in an eco system is called pyramid of bio mass .

10. What is pyramid of energy?

A. A graphic representation designed to show the quantity of energy at each tropic level in an eco system is called pyramid of Energy.

11. What is Bio mass?

A. Any type of plant or animal material that can be converted into energy is called Bio mass.

2 MARK QUESTIONS

1. What is biomass? Draw a pyramid of biomass for the given food chain-

(I) grass leaves, (ii) herbivores, (iii) predators, (IV) hawk

Biomass: Any type of plant or animal material that can be converted into energy is called biomass.

Pyramid of biomass:

- 1. Pyramid of biomass indicates the available food at each trophic level of a food chain.
- 2. In terrestrial ecosystems, the biomass decreases from producers to top carnivores.



4 MARK QUESTIONS

- 1. How use of toxic material is affecting the ecosystem? Write a short note on bioaccumulation and bio magnifications.
 - 1. The indiscriminate use of toxic material such as pesticides, herbicides and fungicides leads to the destruction of many other species along with pests.
 - 2. Some of these may be predators which naturally feed on these pests, some other may be the food of other animals.
 - 3. Non-biodegradable chemicals like mercury and lead are dangerous, when they accumulate in the bodies of animals.
 - 4. These may lead to unpredictable changes in food chains and upsetting the balance within the ecosystem.

Bio-accumulation:

- I. The process of entering of pollutants in a food chain is called bio-accumulation.
- II. When the toxic chemicals are sprayed on plants, they mix up with soils and water, these are absorbed by the plants along with the water.
- III. When herbivores eat these plants the toxins go into their bodies.
- IV. When carnivores eat the herbivores these toxins go into their bodies. Bio-magnification:
- I. The tendency of pollutants to concentrate as they move from one trophic level to the next is known as bio-magnification.
- II. Once the bio-degradable substances get accumulated in the bodies of producers, finally they reached to the bodies of human beings in high amount. Because the human beings occupy the top level in any food chain.
- 2. What is tropic level? What does they represent in an ecological pyramid?
 - 1. Trophic level is the feeding position in a food chain.
 - 2. In an ecological pyramid, the first trophic level represents the primary producers, and their number, biomass or energy.
 - 3. Second trophic level represents the herbivores or primary consumers and their number, biomass or energy.
 - 4. Third trophic level represents the lower carnivores or secondary consumers and their number, biomass or energy.
 - 5. Fourth trophic level represents the higher carnivores or tertiary consumers and their number, biomass or energy.
- 3. What will happen if we remove predators from food web?
 - 1. Removal of organisms from any trophic level of a food chain disturbs the ecosystem and leads to ecological imbalance.

- 2. If we remove predators from food web the prey population will increase enormously as there is no natural control over them.
- 3. The producer's population will decrease rapidly as the organisms feeding on them increase.
- 4. After few generations the prey population also begins to decrease as some of the preys begin to die due to starvation.
- 5. Some adaptations may also be developed by the organisms to bring the ecological organisms.
- 6. But it may take some generations, till that the ecosystem will be disturbed and imbalanced.

4. Observe a plant in your kitchen garden, and write a note on producer - consumer relationship.

- 1. In our garden I select a mango tree to study the producer-consumer relationship.
- 2. The plant synthesizes its own food through photosynthesis.
- 3. The primary consumers like aphids, ants and other arthropods get shelter and food from this.
- 4. The secondary consumers like sparrows and lady bird feed on these aphids and earthworms.
- 5. The tertiary consumers like Crows and hawks often trouble these carnivorous birds.
- 6. It also observed some earthworms making burrows as its base making aeration of the soil. The excreta of earthworms enrich the soil with organic matter. In return, these get their food from fallen leaves of the plant.
- 7. All these are maintaining their lives in a stable ecosystem.

5. What type of information you require to explain pyramid of biomass?

To explain the pyramid of biomass I require the following information.

- 1. The type of ecosystem
- 2. Producers in the ecosystem
- 3. Primary consumers in the ecosystem
- 4. Secondary consumers in the ecosystem
- 5. Tertiary consumers in the ecosystem
- 6. Number of organisms at each tropic level
- 7. Size of organisms at each tropic level
- 8. Weight of organisms at each tropic level
- 9. All forms of waste produced at each tropic level
- 10. Total amount of biomass produced at each tropic level

6. Prepare slogans to promote awareness in your classmates about eco-friendly activities.

- 1. Live and let live.
- 2. Save energy save lives.
- 3. Save mother earth.
- 4. Earth needs you.
- 5. Go ecofriendly.
- 6. "No" to bikes and cars "yes" to cycle.
- 7. If we protect environment, it protects us.
- 8. Conserve nature-conserve life.
- 9. Clean the environment, live happily.
- 10. Plant a tree for your environment.
- 11. Think eco-friendly and live eco-friendly.

7. Suggest any three programs on prevention of soil pollution in view of avoiding pesticides.

Pesticides are the toxic chemicals which are used to destroy pests they not only disturb the ecosystem but also pollute the soil. To prevent soil pollution caused by pesticides following programs should be implemented.

- a) Rotation of crops
- b) Biological pest control
- c) Development of genetic resistant strains.
- a. Rotation of crops:
 - I. Same crop should not be grown in the same field in successive seasons.
 - II. As the pest which grows on one crop never grows on the other, they can be kept under control naturally.
- a) Biological pest control:
 - I. In this method pests are controlled by some biological processes, instead of using chemical pesticides.
 - II. Using predators, using hormones like pheromones, sterilization of the insect pests and utilization of biological pest's repellants such as neem oil, etc.; are some of the biological pest control methods.
- b) Development of genetic resistant strains.
 - I. Nowadays using genetic engineering pest resistant strains are being produced.
 - II. If we use these, crops never get affected by the pest, so no need to use the pesticides.

8. Answer the given questions

Causes	Area in 1967(Km2)	Area in 2004(Km2)		
Lake –water spread area	70.70	0		
Lake –water spread area	70.70	0		
Lake with dense weed	OCE	15.20		
Lake-liable to flood in	E IV SCA			
rainy season	100.97	0		
Aquaculture ponds	0	99.74		
Rice fields	8.40	16.62		
Settlements	0.31	1.37		
Total	180.38	180.38		

1. In which year lake-water spread area is more? Why?

Ans.In the year 1967.Because lake was brought under cultivation.

- 2. How do you think weeds are more in the lake?
- \Box n Excessive nutrient addition, especially from anthropogenic sources, lead to explosive weed growth.
- 3. What are the reasons for decrease in lake area?

Ans.1.In 1996, almost entire lake was brought under cultivation.

- 2. Industries came along in ever-growing intensity in the catchment of the lake.
- 4. What could be the reason for the migration of birds to this lake?

Ans. To avoid extreme cold weather conditions in northern Asia and Eastern Europe.

9. Answer the given questions

	AgriculturalPractic	Aquaculturepractic	Industrialactiviti	Humanactiviti
Problem	es	es	es	es
Biological				
1.				
DecreasedMigrato				
ry bird	-	+	-	-
2. PopulationLoss				
of flora and fauna	-	+	-	-
3. Pathogens	-	-	-	+

Chemical				
1. Eutrophication	+	+	-	+
2. Toxic	+	+	+	-
contamination				
Physical				
1. Siltation	+	+	-	-
2. Flooding	+	+	-	+

1. What are the factors that effects on migratory birds?

Ans. Aquaculture practices

2. Do you find any relationship between biological and physical prob-lems?

Ans. Yes. Aquaculture practices

3. Is BOD of turbid, nutrient rich water high or less? What are it's concequences?

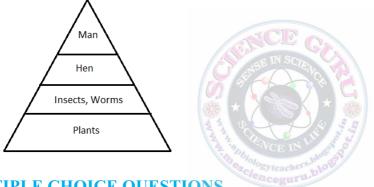
Ans. Organisms in water die its consequences are water borne diseases.

4. People living in catchment area of Kolleru faced so many prob-lems. Why?

Ans. Water borne diseases increased. The lands abandoned are useless for agriculture.

DIAGRAMS

1. Draw a pyramid of number by considering yourself as a top level consumer?



MULTIPLE CHOICE QUESTIONS

1.	Who introduced the "Ecological pyramid" in the year 1927?	()
	A)Charles Darwin B) Charles Babbage C)Charles Elton D) Charles Philips		
2.	Find out the correct answer in the given blanks.	()
	Grass ->> Frog ->> Hawk		
	A)Tiger & wolf B) Grass hopper & Snake C)Goat & Man D) None		
3	Which of the following statement is correct?	()

- 1. Food is transferred from one tropical level to another and it is called
 - 'Food chain'.

 2. Number of food chains in an ecosystem is cross linked to form food
 - 3. The place where an organism lives is called 'Biosphere'.
 - 4. Special position within the food web in which the animals fit in is described as its 'Niche'.

A)1 & 2 B) 1 & 3 C) 1 & 4 D) All are correct

4.	The following picture represe	ents the relationsh	nip of		()
	A)Energy B)Food				
	C)Environment D)Eco-friendly		7 3		
_	A 1 C.11 ! 1.	·			(,
5.	Arrange the following words			i chain.	()
		3)Rabbit	4)Wolf	N 2 1 2 4		
(A)1,3,2,4 B) 1,4,3,		,2,3,4	0) 2,1,3,4	(`
6.	Plants: Producers: Tiger:		C) O :	D) C	1 ()
7	A)Carnivore B) Herbi		C) Omnivore	D) Saprop	nyte	`
/.	Phytoplankton ->> Fis		414 T	N 7 1	()
O	A)Elephant B) Dolph	*	rotoplancton I	•		
8.	A radical campaign was cond	ucted by China g	government in 19.	os. what is the i	iame oi	`
	that campaign	D) Dawat			()
	A)Squirrel campaign	B) Parrot ca				
0	C)Sparrow campaign	D) Eagle ca	mpaign			
9.	Proper order of food chain is		D) G	~ 1 5	()
	A)Eagle -> Rat -> Snake -> C				gle	
10	C)Snake -> Eagle -> Rat -> C	· · · · · · · · · · · · · · · · · · ·		•		
10	. Observr this diagram which i	s a bird in danger	situation. The sc	elentific name of	this bir	d is
		CE C			()
	A)Haliaeetus	B)Passer do				
	C)Sciurus carolinensis	D)Pavo cris	tatus			
11	. Alternation methods for using	pesticides to sav	ve the crops from	the pests.	()
	A)Crop rotaion B) Use of	of genetic strains	C) Mixed crop	s D) All the	above	
12	. The percentage of the biomas	s is transferred fr	o one tropic leve	l to the next in a	food ch	nain
	is	cienceguru.b			()
	A)10 – 30 % B) 10 -2	0 % C) 20	0 -30 %	O) 30 – 40 %		
13	. Rabbit: Primary consumer:	Wolf :			()
	A)Producer B) Secon	ndary consumer	C) Tertiary cor	nsumer D)	None	
14	. The process of entry of pollu	ants into a food o	chain is known as	·	()
	A)Bio-precipitation B) Bio-r	nagnification	C)Bio-accumu	lation D) Biofue	el	
15	. Match the following.	_	,	ŕ	()
	Part A	Part	В			
	1 Phytoplankt	on alkg				
	2 Zoo plankto	_				
	3 Fish	c 10 kg				
	4 Man	d 100 kg				
	A)1-b, 2-d, 3-c, 4-a B) 1-a, 2	-b, 3-c, 4-d C)1-	d, 2-c, 3-b, 4-a I	D) 1-c, 2-d, 3-a,	4-b	
1.7		. ,	·		1	`
10	BOD stands for		D) D1	1 Cton d 1	()
	A)Biological Odour significa		B) Bombay Oi			
	C)Biochemical oxygen dema	ııu	D) Biological (Jaygen Debt		

17. The tendency of pollutants to concentrate as the	ney move from one tr	opic level to th	e next
A)Bio-atavism B) Bio-accumulation 18. What will happen if rabbit is missed in the foc	· · ·	*	o-piracy
Grass -> Rabbit -> Wolf 1)The population of wolf increases			
2)The population of grass increases			
3)The wolfs will start eating grass4)The population of wolfs decreases & of gras	as increases		
A) 1 & 2 B) 3 only	C) 4 only	D) 3 & 4	
19. The metal which was bio-accumulated in liver	,	,	reservoir
in Adilabad district is	, &		()
A)Chromium B) Cadmium	C) Lead	D) Ferrum	
20. In a food chain, the third tropic level is always	s occupied by		()
A)Producers B) Saprophytes	C) Decomposers	D) Carnivore	es
21. The pyramid of biomass in an aquatic ecosyste	em is		()
, 1 6	A & B D) N		
22. The bio accumulation of the metals in fish tssu			_ ()
	2d > Cr > Fe > Ni > P		
	Cr > Cd > Fe > Ni > P		
23. The bioaccumulation causes various physiolog			()
A)Hypertention B) Sporadic fever C)Ro		*	
24. Which of the following organism is considered	a as primary consume	er as well as sec	condary
consumer in the ecological pyramid?	C) Walf	D) Ingget	()
A)Rabbit B) Man 25. Find out the missing one from the table.	C) Wolf	D) Insect	()
TYPE OF PYRAMID BAS	S.E.		()
Pyramid of number Number of			
Pyramid of energy ?	organism		
,	f living matter		
	_	D) E1 _ C	11 4
A) Flow of energy B) Flow of matter	C)Flow of waste	D) Flower po	ollution
26. These are the organisms capable of absorbing energy. ()	solar energy and con	verting it into c	hemical
A)Green plants B) Photosynthetic	· · · · · · · · · · · · · · · · · · ·	nimals D) A	
27. The graphic representation of the feeding leve	1 of an ecosystem by	taking the shap	e of a
pyramid is called			()
· · · · · · · · · · · · · · ·	mental pyramid		
C)Atmospheric pyramid D) Ecological pyra			
28. Food chain: Food web: Bioaccumulation:			()
A)Bio tendency B) Bio piracy	C)Bio degra	adation	D) Bio
magnification 20 Several food chains together form a			()
29. Several food chains together form a (C) F	ood web D) F	ood niche	()
A)Food chamber B) Food link C) F	ood web D) F	ood niche	

A)Mercury B) Arse	ontain enic	— Lead	D) All the	above	,
31. Observe the mind map and v	/		*	()
rotation of crops	3				
sterility biological cor	ntrol				
environmental ethics					
A)Controlling methods of m	-	B)Study of the l	• •	ests	
C)Pests controlling methods		D)Birth controll	ing methods		
32. Producer: Consumer:: Phy				()
		C) Bryoplankton			
33. Growing different crops on	a particular piece		-	vn as()
A)Grain rotation method		B) Furrow rotat	ion method		
C)Crop hoiday		D) Crop rotation			
34. Observe the following table		_	tes + & -	()
	Industrial activi	ties H	uman activity		
Eutrification	-	+			
Toxic contamination	+	-			
A)+ indicates it influence					
B)+ indicates it doesn't i		ates it influences			
C)Both indicate they dor	i't influence		6 1		
D)None of the above			A -		
35. The given diagram represen				()
A)Symbiotic relationship	B)Parasitic relat		WANT CO.		
C)Food relationship	D)Interspecifi	ic relationship			
36. Hai! I am a metal and I was	found in the gills	s liver and kidney o	of fish in EBWR	R. Who	
am I?	To with the body State			. ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
A)Ferrum B) Chroi	nium	C) Cadmium	D) Lead		
37) What happens if the herbix		· · · · · · · · · · · · · · · · · · ·	/	()
A)Abnormal growth of produ				(
		Dinoimal grown	i di piduuccis		,
, -		, <u> </u>	i or producers		,
C)Growth of producers will d	lecrease	D) None	-	appears	in
C)Growth of producers will d 38)Many pollutants are release	lecrease ed into water fron	D) None an industrial area.	-	appears	in (
C)Growth of producers will d	lecrease ed into water fron	D) None an industrial area.	-	appears	in (
C)Growth of producers will do 38)Many pollutants are release the living organisms of a form.)	lecrease ed into water fron ood chain, it is cal	D) None n an industrial area. lled	If any residue a		(
C)Growth of producers will do 38)Many pollutants are released the living organisms of a form () A)Bioremediation B) Biometric B)	lecrease ed into water fron bod chain, it is cal	D) None n an industrial area. lled C) Biopollution	If any residue a		(
C)Growth of producers will do 38)Many pollutants are released the living organisms of a formula of the living organisms organisms organisms organisms of the living organisms of the living organisms orga	lecrease ed into water fron bod chain, it is cal imicry th in lake of Koll	D) None n an industrial area. lled C) Biopollution er is	If any residue a D) Biomagn		(
C)Growth of producers will do 38)Many pollutants are released the living organisms of a form. A)Bioremediation B) Biom 39)Reason for Eichornia grown A)Excessive nutrient addition.	lecrease ed into water from ood chain, it is cal imicry th in lake of Koll a B) L	D) None n an industrial area. lled C) Biopollution er is ess nutrient addition	If any residue a D) Biomagn		(
C)Growth of producers will do 38)Many pollutants are released the living organisms of a form. A)Bioremediation B) Biom 39)Reason for Eichornia grown A)Excessive nutrient addition C)Seasonal change	lecrease ed into water from bod chain, it is cal imicry th in lake of Koll a B) L D) None of	D) None n an industrial area. lled C) Biopollution er is ess nutrient addition the above	If any residue a D) Biomagr		(
C)Growth of producers will do 38)Many pollutants are released the living organisms of a form. A)Bioremediation B) Biom 39)Reason for Eichornia grown A)Excessive nutrient addition C)Seasonal change 40)Herbivores: Primary consultation of the control of the contr	lecrease ed into water from ood chain, it is cal imicry th in lake of Koll a B) L D) None of imer: Top carni	D) None n an industrial area. lled C) Biopollution er is ess nutrient addition the above	If any residue a D) Biomagr	nificatio ((
C)Growth of producers will do 38)Many pollutants are released the living organisms of a form) A)Bioremediation B) Biom 39)Reason for Eichornia grown A)Excessive nutrient addition C)Seasonal change 40)Herbivores: Primary consumary Consumer A)Secondary consumer	lecrease ed into water from ood chain, it is cal imicry th in lake of Koll a B) L D) None of imer: Top carni	D) None n an industrial area. lled C) Biopollution er is ess nutrient addition the above	If any residue a D) Biomagr	nificatio ((
C)Growth of producers will do 38)Many pollutants are released the living organisms of a formula of a formula of the living organisms of a formula of a formula of the living organisms of a formula of a formula of the living organisms of a formula of a formula of the living organisms of a formula of a formula of a formula of a formula of the living organisms of a formula of	lecrease ed into water from bod chain, it is cal imicry th in lake of Koll a B) L D) None of imer: Top carni B) Decomp	D) None n an industrial area. lled C) Biopollution er is ess nutrient addition the above evores : oser C)	If any residue a D) Biomagn Tertiory consun	nificatio ((
C)Growth of producers will do 38)Many pollutants are released the living organisms of a form) A)Bioremediation B) Biom 39)Reason for Eichornia grown A)Excessive nutrient addition C)Seasonal change 40)Herbivores: Primary consumary Consumer A)Secondary consumer	lecrease ed into water from bod chain, it is cal- imicry th in lake of Koll- D) None of the E Company B) Decompany cess of	D) None n an industrial area. lled C) Biopollution er is ess nutrient addition the above evores : oser	If any residue a D) Biomagn Tertiory consum n.	nificatio ((ner	(

KEY SHEET:

1)C	2)B	3)D	4)B	5)A	6)A	7)D	8)C	9)B	10)B	11)D	12)B	13)C
14)C	15)A	16)C	17)C	18)C	19)B	20)D	21)B	22)B	23)D	24)B	25)A	26)D
27)D	28)D	29)C	30)D	31)C	32)D	33)D	34)A	35)C	36)C	37)A	38)D	39)A
40)C	41)D											



10. NATURAL RESOURCES

1 MARK QUESTIONS

- 1. What are Natural resources?
- A. The resources which are available in nature in huge quantity are called Natural resources.
- 2. What is conservation?
- A. Conservation is the practice of caring for the resources, to get continous benefit from them.
- 3. What are Renewable resources?
- A. Some of the resources can be replaced after they are used and are called renewable resources.
- Ex: Air, Water, Soil, Plants, Animals, Etc.,
- 4. What are non-renewable resources?
- A. Some resources cannot be replaced at all once they are used up, they are gone for ever. Such resources are called non-renewable resources. Ex: Fossil Fuels.
- 5. What is sustainable development?
- A. When we use the environment in ways that ensure we have resources for the future, it is called sustainable development.
- 6. What Serve as a lung for the world?
- A. Forests serve as a lung for the world.
- 7. What is Contour Strip Cropping? What is its use?
- A. Contour Strip cropping is a method of Soil Conservation. Several Crops—such as corn, wheat and Clover are planted in alternating—Strips across a Slope or across the path of the prevailing Wind.
- 8. What is Selective harvesting?
- A. During the harvesting of contour strip cropping plants .We remove the crops alternatively. Then the other crops anchor the soil. This method is called Selective harvesting.
- 9. What is Bio-diversity?
- A. Bio-diversity is the variety of living things that populate the earth.
- 10. What is Percolation Tank?
- A. Percolation Tanks are normally earthern dams with masonry structures where water may over flow.
- 11. What are Fossil Fuels?
- A. Fossil Fuels were produced from the remains of ancient plants and animals. Ex: Coal, Petroleum, and Natural gas.
- 12. What is Micro-Irrigation?
- A. Micro Irrigation is an Irrigation method that saves water and fertilisers by allowing water to drip slowly to the roots of plants. Drip irrigation sprinklers are collectively called as Micro-Irrigation.
- 13. Expand ICRISAT?
- A.International Crop Research Institute for Semi Arid Tropics. It is stituated In Hyderabad.
- 14. Expand IUCN?
- A. International Union For The Conservation Of Nature

2 MARK QUESTIONS

- 1. Suggest some ways of reusing resources in your locality?
 - 1. By using the paste of waste papers we can prepare some household items like bowls, and toys, etc.
 - 2. Using waste clothes we can prepare doormats and ropes
 - 3. Spoiled vegetables and fallen leaves in our garden can be used as compost for plants in our house.
 - 4. Using ice cream sticks we can prepare decorative items.
 - 5. Pen stands are prepared by sticking together the used bangles.
- **2.** What are effects of deforestation?
 - 1. Deforestation destroys wildlife habitats.
 - 2. It increases soil erosion.
 - 3. It releases greenhouse gasses into the atmosphere, contributing to global warming.
 - 4. We cannot get sufficient rainfall.
 - 5. It harms people who depend on the forests for their survival.

4 MARK QUESTIONS

1. The BP statistical Review of World Energy in June measured total global oil at 188.8 million tons, from proved oil resources at the end of 2010. This is only enough for oil to last for the next 46.2 years. What measures should be taken to conserve oil? What will happen if we do not conserve it?

The measures to conserve oil resources:

- 1. Exploring of alternatives to fossil fuels like solar power, wind power, bio-fuel.
- 2. Large scale production of electricity uses the sun, wind and water.
- 3. Turn off lights and other electrical goods when we are not using them.
- 4. Purchase of energy efficient appliances.
- 5. Maximum usage of public transportation whenever possible.

If we don't conserve the oil, all the oil resources would be exhausted. The biproducts like plastics, synthetic rubber, fabrics, medicines, cosmetics, waxes, cleaning products and medical devices etc. would not be in use in the future.

- 2. What is sustainable development? How is it useful in natural resource management?
 - 1. Sustainable development: When we use the environment in ways that ensure we have resources for the future, it is called sustainable development.
 - 2. If all the resources are carelessly managed, they will be used up.
 - 3. So, the people must reduce the usage of resources.
 - 4. The continuation of life depends on the careful use of natural resources.
 - 5. Thus, sustainability should be implemented in all aspects of natural resources. So that they would be available to our future.
- 3. Write a detailed note on management of a natural resource?
 - 1. Natural resources of our Earth include air, water, soil, minerals, fuels, plants and animals.
 - 2. If we conserve the resources, they are available for future generations also.
 - 3. All our needs like food, water, air and shelter come from natural resources. But we are utilizing them indiscriminately.
 - 4. Use of natural resources without affecting the needs of the future generations is the best solution for natural resource management.
 - 5. Conservation of forests can be brought by controlling deforestation and replacing some wood products with alternatives.

- 6. Soil conservation can be achieved by contour strip cropping.
- 7. Conservation of biodiversity can be brought by Protect the natural habitats of animals by establishing national parks and sanctuaries and implementing strict laws.
- 8. Using of renewable energies like solar, wind, hydro power and biofuel is the best way to conserve fossil fuels.
- 9. Reduce, Reuse, Recycle (3'R) are the suitable and right methods to conserve the natural resources in an effective way.
- 4. Why should we conserve forests and wild life?

Need to conserve forests:

- 1. Forests provide raw materials for timber industry and sports equipment industry.
- 2. Forests prevent floods and soil erosion.
- 3. Forests help in bringing sufficient rainfall.
- 4. Forests also provide natural habitat to wild animals and birds.
- 5. Forests maintain the ecological balance.

Need to conserve wild life:

- 1. The wild life maintains ecological balance in nature. For example, if we conserve lions and tigers, they keep the herbivorous animals under control and save the plants from over grazing.
- 2. Wild life should also be conserved to prevent the extinction of rare varieties of animals and birds from this earth.

5. Suggest some approaches towards the conservation of forests?

- 1. The indiscriminate and unauthorized cutting of forests for timber, trade and fire wood should be controlled.
- 2. In case of cutting of forests, for every acre of forest an equal area of land should be planted with trees.
- 3. Overgrazing of forests should be prevented.
- 4. We should prevent and control forest fires.
- 5. The local people should be involved in the conservation of forests by giving employment.

6. Natural resources are decreased more rapidly. Guess what will be the consequences?

- 1. It leads to very serious consequences on human life.
- 2. There would be ecological imbalance and human life become difficult to live.
- 3. All the fossil fuels would be exhausted and the people suffer a lot for transportation and petroleum products like cleaning agents, fabrics, pesticides etc.
- 4. Due to deforestation, soil erosion occurs. The fertility of soil is reduced. Crop production decreases. People suffer from starvation.
- 5. When the forests were totally vanished, there would be no rains, leads to water scarcity. Ground water table declines rapidly and people suffer from thirst.
- 6. There would be no electricity and no development.

7.. What are four R's mantra to save the environment?

Four "R"s (Reduce, Reuse, Recycle and recover) is the best method to conserve resources. Reduce: consumption of resources must be reduced. The production of waste also be

reduced. Ex: Repair leaked taps, switch off unnecessary lights and fans.

Reuse: The materials are reused again. So when we are purchasing an item we give preference to those which are suitable for reuse again. We should not use disposable items. Ex:The articles made by waste material like bowls, bags and flower vases.

Recycle: The disposable materials can be reprocessed into new products. Ex: one third of the iron produced in America comes from recycled automobiles.

Recover: we must recover the resources what we used. Ex: when we cut trees we must plant the trees again.

8. Answer the given questions:

	Type of	Donth of hora	% of area	Total cost of well
Village	Type of	Depth of bore		
	farmer	well in feet	irrigated per	irrigation per acre per
			well Kharif	year in rupees.
			Rabi	
Village-1	Large	130 - 200	2.50	250 -70000
			1.24	
	small	110 - 180	2.00	25000 - 65000
			1.13	
Village-2	Large	90 - 300	1.53	22000 - 50000
			0.87	
	small	60 - 200	0.99	20000 - 45000
			0.46	

1.Is the availability of water resource same for a small and a large farmer? Ans.No.

- 2. How should a farmer utilize such a condition?
- ☐ns.By irrigating more area a
- 3.If a well can irrigate 2.5 percent of cultivable land, how many wells would irrigate whole of the land?

Ans.40wells

- 4. What could help the small farmer reduce expenditure? (Hint: think of crops that require less water)
- ☐ Ans.Growing crops that require less water.

9. Answer the given questions

Village	Type of	Net income	per acre i	Total income per		
	farmer	Paddy	Paddy	Cotton		acre year in rupees
		Gingelly	_			
		Kharif	Rabi			
Village-1	Large	8200	8700	4900	3300	25100
	small	7046	8490	10889	3110	29535
Village-2	Large	10698	5970	4000		24263
		3595				
	small	9128	7380	3031	•	22189
		2650				

1. Which crop is most profitable for a small farmer in Vaddicherla?

Ans. Paddy in Kharif is more profitable.

- 2. Which crop could replace paddy and be profitable as well for a small farmer in Vanaparthy? Ans. If cotton replaces paddy,it will be profitable.
- 3. Do you think the income of a small farmer in Vaddicherla is sufficient enough to meet his expenditure?

Ans. No.

- 4. Do you think farming as an occupation is profitable for the small farmer in Vaddicherla? Ans. No.
- 10. Observe the diagram and answer the given questions:

1. How much per cent of area do you think is irrigated by other sources of water? Ans.5% of area. 2. Why is it important to recharge the ground water sources? Ans. Because nearly 43% of irrigating land is getting water from ground 3. Why do the rivers fail to benefit the state to an extent they should have? Ans. There are no sufficient structures (dams) to store water. 4. What are the sources for irrigation of 37% lan? Ans. Canals. 11. Observe the diagram and answer the given questions: 1. what are fossil fuels? Ans. The fuels were produced from the remains of ancient plants and Animals are called fossil fuels. 2. Give examples for fossil fuels? Ans. coal, petroleum (oil), and natural gas. 3. What do fossil fuels provide us? Ans. FOSIL FUELS PROVIDE US ENERGY. 4. Why do we need to conserve them? Ans. Because they are non-renewable resources. **MULTIPLE CHOICE QUESTIONS** 1. Statement 1: Water, soil, forests and fauna are the natural resources. Statement 2: Natural resources are present in abundance. Choose the correct option. A) Both are true B) Both are false D) 1 is true & 2 is false C) 1 is false & 2 is true 2. Flora: Renewable: Petrol: A) Renewable B) Non renewable C) Recycle D) Regenerated 3. The given diagram represents A) Suitable development B) Stable development D) Sustainable development C) Successful development 4. Find out the odd one out. A) Coal B) Petrol C) Natural gas D) Water 5. IUCN stands for A) International Union for Coal and Natural gas B) Indian Union for the Conservation of Nature C) International Union for the Conservation of Nature D) International Union for the Coordination of Nature 6. Sowmya gave her old books to her sister. Which type of conservation method it is? A)Recycle B) Reduce C) Refuse D) Reuse 7. Government of Andhra Pradesh recently distributed the LED bulbs to the people. What type of conservative method it is? A)Reuse B) Recycle C) Reduce D) Recover 8. The given diagram represents () B)Refusing logo A)Reusing logo C)Recycling logo D)Recovering logo

A)Coal			D) All the
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above 1. The percentage of cultivable land around the world is irrigated by drip irrigation is (A) 12 % B) 20 % C) 2 % D) 25 % Plants used for the production of the bio-fuel are			
,	A)Coal B) Petroleum C) Natural gas D) All the above The percentage of cultivable land around the world is irrigated by drip irrigation is (A) 12 % B) 20 % C) 2 % D) 25 % Plants used for the production of the bio-fuel are (A)Haevia brazialensis B) Rauwolfia serpentine C)Erythroxylon coca D) Jatropa curcas Major consumption of water is in the sector of (A)Industrial sector B) Farming sector C)Mining sector D) Beverages see (C)Rayll form is (A)Indian Council of Research Institute for Semi Arid Tropics B)International Union for the Conservation of Reinteraction of Solidarity and Trade C)International Crop Research Institute for Semi Arid Tropics Expand 3 R's (A)Recover, Reuse, Refuse B) Reduce, Refuse, Reuse C)Reduce, Reuse, Recycle D) Reuse, Recover, Recycle This is the best means of transport for shorter distance (A)Motor bike B) Bicycle C) Car D) Aeroplane Statement 1: Air, water are examples of renewable sources Statement 2: Soakpits help in recharging dried up borewells Choose the correct option (A)Only 1 is correct B) Only 2 is correct C)Both are true D) Both are false. Observe this plant and identify the part that is used for biodiesel production. (A)Fruit B) Bark C)Seed D) Root UNDP stands for (A)United Nations Development Programmee C)United Nations Development B) Development & Do 30 million C) 36 million D) 50 million C) 36 million D) 50 million C) 36 million D) 50 millio		(
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11. ENVIRONMENTAL EDUCATION

1 MARK QUESTIONS:

1. What is Global warming?

Ans. The annual increase in the overall temperature of the earth's atmosphere is called Global warming.

2. Name the gases which are responsible for globalwarming?

Ans.Carbon Monoxide(co), Carbon dioxide(co2), Chlorofluoro carbons(CFCs), Hydro fluoro Carbons(HFCs), Per fluoro Carbons(PFCs).

3. Suggest alternative sources for fossil fuels?

Ans. Solarenergy, Windenergy, Tidal energy.

4. Give some examples for particulate pollutants?

Ans.Dustparticles.Pollengrains,Flyash,coal dust and Cement.

5.Do you think the Jatras, Tirunallu cause damage to the environment?

Ans. The people participating in Jatras, Tirunallu utilize plastic, damp trash and throw the remaining food. All these cause damage to the environment.

6.Usually rag pickers are illtreated by the Public. What happens if they won't do the work?

Ans.if the rag pickers do not work garbage dumps over flow, the people can't live healthy and happily.

7. Give reasons for fluorosis?

Ans.1.Consuming Excess amount of fluorine.

2. Economical status, Physical work, mal nutrition.

8. Name some areas which are affected by the disease fluorosis?

Ans. Nalgonda, rangareddy and Prakasam Disricts.

2 MARKS QUESTIONS:

1.what are the harm ful effects of Global warming?

Ans.1.It causes ice in tundras to melt and this result to floods in coastal areas.

- 2.It results in climate change, which causes diseases like Malaria and Dengue.
- 2. What activities you are going to follow to reduce the effects of Global warming in your school or surroundings?
- Ans.1.We should grow trees in our school or surroundings.
 - 2. We should use public transport for more distances and cycle for very short distances.
 - 3. We should use eco friendly electronic and solar equipment.

3. How do you control mosquito population?

Ans. 1.I do not allow water to stagnant in drains, pots, watertanks, etc.

- 2. I pour Kerosine on stagnant water.
- 3. I spary insecticides in damp areas.
- 4. I empty the trash cans regularly.

4. How do you reduce the use of Fuels?

Ans. 1.I use the public transport.

- 2.I soak the food material before cooking.
- 3.I stop engines at traffic signals and at traffic jams.

5.Is it correct to cement the total surroundings? What are the impacts this kind of activites?

- Ans. 1.It is not correct to cement the total surroundings.
 - 2. They prevent the proper drainage and piling of rain water.
 - 3. They prevent afforestation.
 - 4.they tend to increase the internal temperature of the houses.

6. Write some methods to save the electricity at your home?

- Ans. 1.I turn off lights and fans before I leave the room.
 - 2.I use the solar appliences.
 - 3.I don't keep the refrigerator doors open any longer than I need.
 - 4.I use L.E.D bulbs.

7. Prepare some sloguns on benefits of solar energy?

- Ans. 1. Solar energy is non polluting.
 - 2.you don't need to pay for solar energy-use it freely.
 - 3. Solar energy is abundant-use it.
 - 4. Solar energy is ever green energy.

8. Name the environmentalists and their movements?

- Ans. 1.NarmadaBachavoAndolan—By MedaPatkar.
 - 2. Chipko movement-By SundarlalBahuguna,
 - 3. National Conservation of seeds-By Vandhana Shiva.
 - 4. Green Belt Movement-By Wangari Moathai.

9. What can we do to have birds and Insects in our surroundings?

- Ans.1.Giving them grains to eat.
 - 2. Giving water during summer.
 - 3.Limit the use of chemicals and pesticides.
 - 4. Plant native fruit and berry bearing bushes and trees.

10. What are the harmful effects of destruction of forests and hills for

- Ans.1.Loss of Bio-diversity
 - 2.soil erosion
 - 3.Lack of rain fall
 - 4.Co₂ in atmosphere increases.

11. How the natural resources in your locality are being misused . Explain it?

- Ans. 1. Encroachment of forest for roads, Industries and to build houses.
 - 2. Agricultural land is converted into plots for residential use.
 - 3. The underground water resources are drawn heavily by digging bore wells.
 - 4. Crushing the hills for grassed and metal.

12. Why ground water level is decreasing? Give reasons?

- Ans. 1.The usage of water for domestic, agricultural and industrial purpose is increasing day by day.
 - 2. The water used per one annum is more than the water percolated due to rain.
 - 3.digging bore wells more deeper and drawing the water in excess.

4. We are not taking any steps for water management.

13. Suggest measures to recycle water in your locality?

Ans.1.we should dig soak pits.

- 2. We recycle the once used water(used for cleaning utensils and food items) by allowing it to the plants.
 - 3.we should practice water management techniques.
 - 4. We should clean the silt and mud in tanks and ponds.

14. What is WALTA Act?

Ans.1.this is Andhra Pradesh water, land and trees act-2002.

2. This act tells us about the conservation of water on land, conservation of forests, and conservation of ground water .

15. Why people migrate from rural areas to urban areas?

Ans. People migrate to towns and cities for

- 1. Need of education, treatment and for earning.
- 2. Need of jobs.
- 3. Earning money.

16.Can you guess the consequences of migration to urban areas?

Ans.1.The urban ares become slum areas with heavy population.

2.It influences bad effect on transport, food, employment and health.

17. What fecilities you are expected to establish in your habitation? What are the benefits from these fecilities?

- Ans. 1. Infrastructural fecilities are to be established.
 - 2. Proper connectivity to cities must be established.
 - 3.Uninterupted power should be supplied.
 - 4. The health and education fecilities must be established.

Thease fecilities would raise the income of villagers. Then they stop to migrate to cities.

18. Why some people are not have the drinking water fecility even though they reside near rivers and streams, give your reasons?

- Ans.1. Water in the rivers is being polluted by human activities
 - 2. Release of industrial effluents and garbage into rivers polluting rivers water.

19. Find out the reasons for floods in a city?

- Ans.1.Cutting down of trees.
 - 2. Cementing the roads.
 - 3.Lack of percolation tanks for rain water.
 - 4.Improper drainage facility.
 - 5. Heavy rains.

20. Suggest the measures to check the floods?

- Ans.1.Drainage fecilities should be proper.
 - 2.planting more trees.
 - 3.Leaving the edges roads without cementing.
 - 4. Percolation tanks and pits should be constructed.

21. How does the water bodies/rivers get polluted in our surroundigs?

- Ans.1.Due to the increase in population.
 - 2.Industrial discharges from factories.

- 3. House hold wastes.
- 4.fertilisers and pesticides

22. How the developmental activities affect the environment?

- Ans.1.Different species of plants and animals may disappear during the construction of new projects.
 - 2. Forests may be cleared.
 - 3. Cultivated land may also be cleared off which mayresult in food scarcity.
 - 4. Animals may lose their habitates and they invade near by villages.

23. What are the main reasons for health problems?

Ans.1.Poverty,2.Illitracy,3..lack of awareness,4.Lack of proper sanitation,5.Lack of cleanliness,6.Not getting Immunised,7.Proper living conditions.

24. Write some common measures to prevent the transmission of diseases?

Ans.1.Drinking boiled water.2.Eating the food when it is hot,3.Washing hands,4.Preventig vectors like mosquitoes and house flies,5.Keeping the surroundings clean and hygiene.6.Maitaining the personal hygiene.

25. What is disaster management?

Ans.Disaster management covers the range of activities designed tomonitor, control over disasters.

26. How would you help the people affected by natural disasters?

Ans.1.I give shelter ,food,medicine,blankets to them.

2.I create awareness about precautionary measures to be taken during the time of natural calamities.

27. What kind of responsibilities you take to manage the healthy environment in home?

Ans. I will take the following responsibilities:

- 1.our house should allow free flow of light and air.
- 2. We should not dispose domestic wastes on streets.
- 3. We should keep our surroundigs without flies, mosquitoes, rats and cockroaches
- 4.plantation of trees.

28. How will you conserve natural resources?

Ans.1.we should adopt to plantation of trees.

- 2. We should allow free flow of air and light into the rooms.
- 3. Whnever there is no need, we should turn off the electric switches.
- 4. We should cultivate the habit of rain water harvesting by digging soak pits.
- 5. We should not convert forest area agricultural land into S.E.Z..

29. Write sloguns on conservation of water resources?

Ans.1.Conservation of water-Conservation of life on earth.

- 2. Save water-Save life.
- 3. Adrop of water is precious like adrop of blood.
- 4. You are not only saving water, you are saving our future.
- 5. Stop the drop.
- 6. Every dro counts-use wisely.

30. How do you have water in your school or home?

Ans.1.We should repair leakage taps.

2.We should dig soak pits.

- 3. We should channelize the used water to plants.
- 4. We should conserve rain water in tanks.

31. How can we control fluorosis?

- Ans.1.Consuming protected drinking water.
 - 2. Avoid digging of deep bore wells.
 - 3.taking nutritious food which contains millets,leafy vegetables.
 - 4.Eat more fresh food,less precessed food.
 - 5. Avoid taking food which is prepared by using fluorine water.

32. How should we protect the sacred places?

- Ans.1.We should not leave our waste materials like paper plates, diposable glasses, food remains etc., in the sacred places
- 2. We should not dump waste materials like covers, bottles, oil and other Pooja things near water bodies.
 - 3. Strict punishments should be implemented.
 - 4. We have to inculcate eco friendly behavior.

Choose the correct answer:

1.	Expand CFC	 		()	
	A) Carbon fluoro carbido	e B) C	ommon fluoro carbon			
	C) Chlorine fluoro carbi	de D) C	hloro fluoro carbon			
2.	PFC : Per Fluore Carbons : : SF6 :					
	A)Sulphur Penta Fluoride B) Sulphur Octa Fluoride					
	C)Sulphur Hexa Fluorid	e D) Sulphur	Nano Fluoride			
3.	Observe this image. She is renowned environmentalist. Find out who is she?)	
	A)Nanditha das	B)Arundhat	B)Arundhathi Roy			
	C)Medha Patkar D)Amrutha		Devi			
4.	Match the following			()	
	Part A		Part B		,	
	1 Green Belt Movement		a) Sundarlal Bahuguna			
	2 Green Peace N	Movement	b) Wangari Maathai			
	3 Chipko Movement		c) Bob Hunter			
	1 Narmada Bacl	navo Andolan	d) Medha patkar			
	A)1-b, 2-c, 3-a, 4-d B)	1-a, 2-b, 3-c, 4-	d C) 1-c, 2-d, 3-b, 4-a D) 1-d, 2-c, a	-, 4-b		
5.	Disease like Malaria, De	ngue, Chicken	Gunya, etc are caused by	()	
	A) Cockroach B) I	Lice	C) Lepisma D) Mosquito	es		

6.	•	er from diseases can is done to protect	•	•	*	, Tetar	ıus
	Choose the rig	nt option				()
	A) M is true & C) Both are true			B) M is false & ID) Both are false			
7.	•	novement : Kerala :				()
	A) Andhra Pra	· · · · · · · · · · · · · · · · · · ·	angana	C) Tamil Nadu	D) K	arnata	ka
8.	Find out the m	ismatched one				()
	SN r	novement		ISSUE			
	1	Chipko Movement		Oppose the cutting	ng the trees in H	imala	yas
	2	Center for Science	and Enironme	ent Create av	vareness about		
	envi	ronmental welfare					
	3	Silent Valley Mov	ement	Oppose the prop	osal of Hydro E	lectric	
	Proj				7	. •	
		Narmada Bachao A	ndolan	Oppose th	e Dam construc	tion of	n
	Narmada river A) 1 & 2	B) 1 & 3	C) 1 &	(A D)	None		
9.	•	was wiped from o	CE IN OCIA	D)	None	()
٥.	A) AIDS	B) Cancer		all pox	D) Hepatitis	5	,
10.	,	e part of environme			_ <i>)</i> ·	()
	A)Saving a tree	c 13 3	Dia	5 J	school		
	C)Redusin usa	ge of plastic	B) Gro	the above			
11.	According the	WHO report, "Peop	ole are spendin	ng more money or	n the diseases th	at are	
	transmitted by					()
	A) Rabbit	B) Rat		C) House fly	D) Mosquit	oes	
12.		ps help in the preve	•			()
	A) Drinking bo		<i>*</i>	ecination			
13.	· -	nds before eating ernational campaign	•	the above	sease from the v	vorld	
13.	There is an inc	Zmational campaigi	i conducting t	o cradicateui	sease from the v	voria ()
	A) Cancer	B) AIDS	C) Pol	io D) Encepl	halitis	(,
14.	,	used to kill the larva	· · · · · · · · · · · · · · · · · · ·	,		()
		sh B) Gambusia	-		n fish	`	
15.	This is the grou	and for breeding me	osquito popula	ation.		()
	A) Rain wa	ter B) Sea water	C) Stagnent v	vater D)	River water		
16.	We should spra	ay this on stagnant				()
	A) Petrol	B) Perfume	C) Kerosin	D) Diesel			

17.	Expand LPG	()						
	A)Liquified Phome Gas B) Liquified Phenol								
	C)Liquified Paraffin Gas D) Liquified Petroleum Gas								
18.									
10.	Q: It is better to use small burner than bigger one.								
	Choose the correct option.	()						
	A)Only P is right B) Only Q is right C)Both are right D) Both are wrong	(,						
19.	Q: Meghana keeps the milk out side for some time to get at the room temperature a	and the	an						
19.	boils the milk	and th	CII						
	R: Swetha boils the milk immediately after after taking out of the refrigerator.	(`						
	Who followed the proper way? A) Maghana B) Swatha C) Both D) No.	,)						
20	A) Meghana B) Swetha C) Both D) Nor	ne (`						
20.	are precautionary measures to protect from the diseases.	()						
	A)Drinking boiling water B)Eating food when it is hot	1							
	C)Drinking cool water D)Eating food when it is cool E)Waashing l	nands							
	A) 1, 2 & 5 are right B) 1, 2, 3 & 4 are right								
	B) C)1, 4 &5 are right D) All are right								
21.		()						
	A)Special Education Zone B) Special Employment Zone								
	C)Special Education Zenith D) Special Economic Zone								
22.		()						
	A) 100000 B) 10000 C) 1000, D)500	0							
23.	The main reason behind the 1999 Odisha Super Cyclone is	()						
	A) Deforestation of Mangroove forest								
	B) Aforestation of Mangreoove forest								
	C) Over water usage								
	D) Soil condition change								
24.	R: Hudud cyclone that hit in the coastline of Andhra Pradesh.								
	S: The meaning of Hudud is "Limit" Or "Restriction".								
	Choose the right option.	()						
	A) Only R is true B) Only S is true C) Both are true D) Both are fa	alse							
25.	NGO Stands for	()						
	A)Non Google Organization B) New Google Organization								
	C)New Governmental Organization D) Non Governmental Organization								
26.	Statement 1: Over 100000 people will have to be relocated due to Sardar Sarovar Dam.								
	Statement 2: About 170000 people were relocated due to Narmada Sagar Dam Pro	ject.							
	Find out the correct statement.	()						
	A)Both are true B) Both are false C)1 is true & 2 is false D) 2 is true & 1 is	false	,						
27.	Why the farmers prefer marigold plants in fields of mirchi	()						
	A)For the purpose of beauty B) For the attraction of more insects								
	C)For the soil fertility D) For the growing of different crops								
28.		()						
	A)1 ½ times B) 2 times C)2 ½ times D) 3 ½ times	`	,						
	, , , , , , , , , , , , , , , , , , ,								

29.	Pollination is carried out by agents like		())
	A)Water B) Wind C) In	sects D) A	ll of these	
30.	, , , , , , , , , , , , , , , , , , ,		velling. By their own	
	vehicles will save lit of fuel per year.)
	A)50000 B) 60000 C) 70	0000 D) 80	0000	
31.	More than districts in our co	untry have a ground	water level decline of	
	over four meters during past decade.		())
	A)200 B) 300 C) 40	D) 50)0	
32.	Nearly of the country is overusing gro	ound water resources	())
	A) $\frac{1}{2}$ B) $\frac{1}{4}$ C) $\frac{2}{3}$	D) 3/4		
33.	We can reduce the consumption of water by us	sing this type of rice	variety. ()
	A) SIRI B) BT C) SI	RI D) So	ONA	
34.	Expand SRI.		())
	A) Specific Rice Intensification B) Sy	ystem of Rice intensi	fication	
	C)Suggest of Disc initiality.	vanulant Dian Indiant	.i. a.u.	
	C)Success of Rice initiality D) So	acculent Rice Indicat	1011	
35.	When we purchase articles, we should keep in	mind the following a	ispects ()
		ne materials used in t		
	C)mpact on the environment D) A	ll the above		
36.	Statement 1: 200 million population does not	have access to safe d	rinking water.	
	Statement 2: 600 million in India lack of basic			
	Choose the correct option.		()
	A) Both are true B) Both are false C)1 i	s true & 2 is false D) 1 is false & 2 is true	,
37.	By using this technology we may transplant th		()
0,,	A) Seed transplantation B) Stem transplantation			,
	B) C)Tree transplantation D) Root transplantation	•		
38	From the population of an estimated 100000 th	-	oonulation has fallen to	
50.	around.	ie Earth 5 wha tiger j	jopulation has failed to)
	A) 5000 to 7000 B) 5000 to 10000	C)5000 to 8000	D) 5000 to 9000	,
39.	Zoos are places for	<i>2)2000 to</i> 0000	()
33.	A) Conservation of animals	B) Research	about animals	,
	12) Conservation of minimum	B) Research		
	C)Creating awareness among people about	animals D) All the a	bove	
40.	Statement 1: Substances that are broken down	hy hiological process	s are known as	
10.	biodegradable	by blological process	, are known as	
	Statement 2: The main waste production cente	r is kitchen		
	Statement 2: The main waste production center Statement 3: Leaves, vegetables waste are biod		nene hags inlastics are	
	non biodegradable substances.	egradaore and poryti	iene bags, plasties are	
	Statement 4: Substances that are not broken do	wn by the biological	process are said to be	
	non bio degradable substances.	II of the oldiogical	process are said to be	
	Choose the right option.		()
	222 cm- 220m 28 mom.			

			nt		B) 1 &	2 3 are	right	C) 1	& 4 are	right	D) Al	l are	
41.	right Which of the	follow	ing pro	ducts a	are haza	ardous	waste?					()
	i.Automative	fluids		ii. Bea	uty pro	oducts	iii.						
	Nail polish re	emoval		iv. Ga	rden ca	are prod	lucts						
	v. Mercury b	ased ite	ems	vi. Th	ermom	eters	vii. Tu	ıbeligh	ts				
	A) i, iii &	z iv	B) i, v	& vi		C) i, i	i, iv &	V		D) Al	l the ab	ove	
42.	Sethusamudr	am shij	ping c	anal of	f the co	oast of		sta	ate			()
	A) Andhr	a Prade	esh	B) Ke	rala	C) Ta	mil Na	du		D) Ka	ırnataka	ı	
43.	Which of the	follow	ing riv	ers are	facing	danger	s of po	llution'	?			()
	A) Godav	zari & I	Krishna	ı	B) Mu	ısi	C) Th	ungabh	adra	D) Al	l the ab	ove	
44.	Mosquito : M	Ialaria	: : Flou	rine:_								()
	A) Polio		B) Flo	urosis		C) He	patitis		D) Pel	llagra			
45.	Which state s	stands f	irst pla	ce in o	ur cour	ntry in	utilizin	g solar	energy	?		()
	A) Kerala		•		rnataka	-		langana		D) Gu	ijarat	`	Í
46.	Which of the	statem	ents ar	e right'	?		,			,	Ū	()
	1)Front loader model washing machine are 25 % energy efficient than other models.												
	2) Average life span of Fluoroscent bulb is 10 times greater than that of incandescent bulb										b		
	3)Karnataka,	-											
	4)In Andhra							_					
						tion is	ut prom						
						210/1		iiiiiiai y			ove		
47.	A)1 & 2		B) 1 &	23	SEINSE	C) 1, 2	2 & 3	······································		the ab	oove	()
47.	A)1 & 2 Observe the f	followi	B) 1 & ng diag	t 3 gram ar	d it rep	C) 1, 2	2 & 3	-			oove	()
47.	A)1 & 2 Observe the tale A) Vaccin	followi nation	B) 1 & ng diag B)Ope	t 3 gram are eration	d it rep	C) 1, 2	2 & 3	-			oove	()
47.	A)1 & 2 Observe the f	followi nation	B) 1 & ng diag B)Ope	t 3 gram are eration	d it rep	C) 1, 2	2 & 3	-			oove	()
	A)1 & 2 Observe the tale A) Vaccin B) C)Inje	followination	B) 1 & ng diag B)Ope D)Nor	t 3 gram ar eration ne	nd it rep flood	C) 1, 2	2 & 3	-			oove	()
47. 48)	A)1 & 2 Observe the tale A) Vaccing B) C)Inje	followination ection	B) 1 & ng diag B)Ope D)Nor	gram ar eration ne	d it repflood	C) 1, 2 presents	2 & 3		D) All	the ab		(v using)
	A)1 & 2 Observe the factor A) Vaccin B) C)Inje Which of the 1.Traditional	followination ection following following for the	B) 1 & ng diag B)Ope D)Nor ing stat	gram ar eration ne ement d Srilar	d it repflood	C) 1, 2 presents	2 & 3		D) All	the ab		(y using)
	A)1 & 2 Observe the to A) Vaccin B) C)Inje Which of the 1.Traditional the banana le	followination ection following ty Ugan	B) 1 & ng diag B)Ope D)Nor ing stated and steme	eration ne cement d Srilar	nd it rep flood is right aka foll	C) 1, 2 oresents	metho	d of rai	D) All	the ab) sting by		
	A)1 & 2 Observe the to A) Vaccin B) C)Inje Which of the 1.Traditional the banana le 2.Saving a tre	followination ection following the transfer of	B) 1 & ng diag B)Ope D)Nor ing stated and and wing tree	gram ar eration ne tement d Srilar a. ees in t	is right	C) 1, 2 oresents	metho	d of rai	D) All	the ab) sting by		
	A)1 & 2 Observe the factor A) Vaccin B) C)Inje Which of the 1.Traditional the banana le 2.Saving a tropart of environment	followination ection following the transfer of	B) 1 & ng diag B)Ope D)Nor ing stat nda and and stem wing treat	gram ar eration ne tement di Srilar a. ees in tements	is right	C) 1, 2 oresents ?? ow the cool con	method	d of rai	D) All	the ab (r harve) sting by	are the	
	A)1 & 2 Observe the to A) Vaccin B) C)Inje Which of the 1.Traditional the banana le 2.Saving a tre	followination ection following the transfer of	B) 1 & ng diag B)Ope D)Nor ing stated and and wing tree	gram ar eration ne tement di Srilar a. ees in tements	is right	C) 1, 2 oresents ?? ow the cool con	metho	d of rai	D) All	the ab (r harve) sting by	are the	
	A)1 & 2 Observe the factor A) Vaccin B) C)Inje Which of the 1.Traditional the banana le 2.Saving a tropart of environment	followination ection following the Ugan eaves are, growent	B) 1 & ng diag B)Ope D)Nor ing stat nda and and stem wing treat	gram ar eration ne tement di Srilar a. ees in tements	is right	C) 1, 2 oresents ?? ow the cool con	method	d of rai	D) All	the ab (r harve) sting by	are the	
	A)1 & 2 Observe the factor A) Vaccin B) C)Inje Which of the 1.Traditional the banana le 2.Saving a tropart of environ A)1 & 2	followination ection following the Ugan eaves are, growent	B) 1 & ng diag B)Ope D)Nor ing state nda and wing tre al move B) On	gram ar eration ne tement di Srilar lees in the tements ly 1	is right aka foll he scho	C) 1, 2 oresents ?? ow the cool con	methodopound the are t	d of rai	D) All	the ab (r harve age of D) Bo) sting by	are the	
	A)1 & 2 Observe the factor A) Vaccing B) C)Injector Which of the 1.Traditional the banana lee 2.Saving a trapart of environment A)1 & 2 KEY SHEET 1)D	followination ection following the saves are ee, grownment T: 2)C	B) 1 & ng diag B)Ope D)Nor ing stat nda and and stem wing treal al move B) On	gram ar eration ne tement di Srilar a. ees in tements ly 1	is right haka foll he scho	C) 1, 2 or esents ?? ow the cool con C) Bo 6)C	methodopound th are t	d of rai s, reduc	n water cing us	(r harve age of D) Bo) sting by plastic oth are f	are the	
	A)1 & 2 Observe the factor A) Vaccing B) C)Injector Which of the 1.Traditional the banana let 2.Saving a tropart of environal A)1 & 2 KEY SHEET 1)D 13)C 14)B	followination ection following following the saves are ee, growent the same on the save for the	B) 1 & ng diag B)Ope D)Nor ing statenda and and stem wing treat al move B) On	gram ar eration ne tement di Srilar ne tement si ly 1 4)A 17)D	is right has followed. 5)D 18)C	C) 1, 2 presents ? ow the cool con C) Bo 6)C 19)A	methornpound th are to 7)C8) 20)A	d of rais, reductive	n water cing us 9)C 22)B	(r harve age of D) Boot 10)D 23)A) sting by plastic oth are for the distribution of the distributio	are the False 12)D 25)D	
	A)1 & 2 Observe the factor A) Vaccing B) C)Injector Which of the 1.Traditional the banana lee 2.Saving a trapart of environment A)1 & 2 KEY SHEET 1)D	followination ection following the saves are ee, grownment T: 2)C 15)C 28)C	B) 1 & ng diag B)Ope D)Nor ing stat nda and nd stem wing tro al move B) On 3)C 16)C 29)D	gram ar eration ne ement d Srilar a. ees in tements ly 1 4)A 17)D 30)C	is right has followed by the school.	C) 1, 2 presents ?? ow the cool con C) Bo 6)C 19)A 32)C	methornpound th are to 7)C8) 20)A 33)C	d of rais, reductive Tue D 21)D 34)B	D) All n water seing us 9)C 22)B 35)D	(r harve age of D) Boot 10)D 23)A) sting by plastic oth are for the distribution of the distributio	are the False 12)D 25)D	

SLOGANS

1. Importance of plants:

- 1. Save trees, save lives.
- 2. Save trees, save earth.
- 3. Killing trees is killing us.
- 4. Save trees now, they will save you in future.
- 5. Trees the lungs of the world.
- 6. If you save a tree you save a life.
- 7. No trees = No oxygen = No life.

2. Importance of forests:

- 1. Save forests, forest will save you.
- 2. Save forests save the climate.
- 3. Protect forests and be safe.
- 4. Forests for a living planet.
- 5. Save forests, stay healthy.
- 6. Say no to deforestation.
- 7. Forests The lungs of the world.

3. Blood donation:

- 1. A small drop of blood, a great hope for life.
- 2. The gift of blood is the gift of life.
- 3. Share blood share life.
- 4. Be a blood donar and save a life.
- 5. Share life donate blood.
- 6. Blood donation a gift of life.
- 7. Blood donars bring a ray of hope.
- 8. My blood your life.

4. Organ donation:

- 1. Recycle life be an organ donar.
- 2. Be a hero be an organ donar.
- 3. Live life, give life.
- 4. Organ donation a gift for life.
- 5. Organ donation the gift that lives on.

5. Child marriages:

- 1. Let a child be a child, stop child marriages.
- 2. Avoid child marriages, save childhood.
- 3. Child marriages are social evils.
- 4. Girl for education and women for marriage.
- 5. Childhood is not for motherhood.

6. Female Foeticide:

- 1. Save girl child save tomorrow.
- 2. Save girl child save future generations.
- 3. No girl! No women! Thus no life.
- 4. Say no to abortion, save girl child.
- 5. Without girls life cannot continue.

7. Biodiversity:

- 1. Biodiversity is life, biodiversity is future.
- 2. Protect the nature as it protects us.
- 3. Our life depends on biodiversity.
- 4. Biodiversity is the way to be.
- 5. Biodiversity is the key for more variety.
- 6. Live and let live.
- 7. The more variety, the better society.

8. H.I.V/AIDS:

- 1. Enjoy life, take control, stop HIV/AIDS.
- 2. Open your eyes before AIDS closes it.
- 3. AIDS: Prevention is the only cure.
- 4. Don't lose your life, stay away from HIV.
- 5. Don't cry, don't die, when AIDS comes near, say goodbye.

9. Protection of environment:

- 1. Save energy save lives.
- 2. No to bikes and cars yes to cycles.
- 3. Say no to plastic.
- 4. Do not cut trees as it cuts our throats later.
- 5. Follow the concept 4R'S.
- 6. Save a drop save our planet.
- 7. Encourage friendly insects discourage toxic pesticides.

10. Water conservation:

- 1. Save water save life.
- 2. A drop of water is precious like a drop of blood.
- 3. Conservation of water conservation of life on earth.
- 4. A drop of rain water is source for our
- 5. Water leakage is like leakage of blood of earth.

11. Solar energy:

- 1. Solar energy is non polluting.
- 2. You don't pay for sunlight use it freely.
- 3. Solar energy is abundant use it.
- 4. Solar energy is ever green energy.
- 5. Solar energy is cost effective.

12. Vaccination:

- 1. Take vaccine save the life.
- 2. Spare the children give them vaccine.
- 3. Love them protect them give them vaccine.
- 4. Get resistance power, through vaccination.
- 5. Get a drop stop the trap.
- 6. Vaccination is the only way to rescue from death.

HABITS/SUGGESTIONS/OPENIONS

1. Food Habits To avoid Indigestion:

To avoid indigestion of food, and to become healthy, I would follow these food habits.

- 1. I eat simple and well balanced diet
- 2. I take food in leisurely manner.
- 3. I thoroughly masticate the food.
- 4. I drink plenty of water.
- 5. I eat high fiber food.
- 6. I avoid junk food.
- 7. I don't encourage over eating.
- 8. I eat fruits and vegetables.
- 9. I follow one particular time for meals

2. To Avoid Vitamin Deficiency Diseases:

I take milk, egg, cereals, pulses, green leaf vegetables, fruits, vegetables, nuts, citrus fruits, carrot, tomato, pumpkins, papaya, etc;

3. Why don't we talk while eating

1. If we talk while eating, the food may enter into wind pipe. In order to send them to out of the wind pipe choking occurs, which helps in sending the food Particles out of it.

2. So we are advised not to talk while eating food.

4. Not to suffer from swollen legs (Edema)

- 1. Avoid sitting and standing for too long. Getting up and stretching the legs ones in a while avoid fluids buildup.
- 2. Keep the legs elevated above the level of the heart for 30 min a day.
- 3. Massage the affected area with frim pressure towards the heart.
- 4. Low salt diet can reduce swelling.
- 5. Diuretics, medications held increase urine output, excrete water and sodium.
- 6. Avoid temperature changes. When going from heart doors into an air conditioned room or vice versa can make edema worse.

5. Followed habits/suggestions for proper functioning of kidneys

- 1. Drink atleast 2 ltrs of water regularly
- 2. Eat home cooked meals and avoid canned foods, fast foods, and highly processed foods.
- 3. Take low salt diet. High sodium foods damage kidneys
- 4. Eat low protein food like grains and vegetables.

6. Taking steps/ suggestions on conversation of forests:

- 1. The indiscriminate and unauthorized cutting of forests for timber, trade and fire wood should be controlled.
- 2. In case of cutting of forests, for every acre of forest an equal area of land should be planted with trees.
- 3. Overgrazing of forests should be prevented.
- 4. We should prevent and control forest fires.
- 5. The local people should be involved in the conservation of forests by giving employment.

7. Taking steps/suggestions on conservation of fossil fuels

- 1. Exploring of alternatives to fossil fuels like solar power, wind power, bio-fuel.
- 2. Large scale production of electricity use the sun wind and water.
- 3. Turn off lights and other electrical goods when we are not using them.
- 4. Purchase of energy efficient appliances.
- 5. Maximum usage of public transportation whenever possible.

8. Taking steps/suggestions on conservation of Natural resources

- 1. Use of natural resources without affecting the needs of the future generations is the best solution for natural resource management.
- 2. Conservation of forests can be brought by controlling deforestation and replacing some wood products with alternatives.
- 3. Soil conservation can be achieved by contour strip cropping.
- 4. Conservation of biodiversity can be brought by Protect the natural habitats of animals by establishing national parks and sanctuaries and implementing strict laws.
- 5. Using of renewable energies like solar, wind, hydro power and biofuel is the best way to conserve fossil fuels.
- 6. Reduce, Reuse, Recycle, Recover (4'R) are the suitable and right methods to conserve the natural resources in an effective way.

9. Taking steps/ suggestions on conservation of ground water

- 1. Dig percolation pits and soak pits.
- 2. practice micro irrigation techniques
- 3. Dry land crops should be grown
- 4. Tanks should be constructed to harvest rain water
- 5. Water projects should be constructed across rivers
- 6. We should clean the silt and mud in tanks and ponds

- 7. Planting trees as many as possible
- 8. Awareness should be created in people

10. Taking steps/ suggestions to reduce global warming:

- 1. We should grow trees in our school/ surroundings
- 2. We should use public transports for more distances and cycle for very short distances.
- **3.** We should use eco friendly electronic and solar equipment

11. Taking steps/ suggestions to save electricity at home:

- 1. Turn off lights and fans when leaving a room
- 2. Use solar appliances
- 3. Don't keep the refrigerator doors open any longer than you need
- 4. Use LED bulbs
- 5. Use low consumption electrical appliances

12. Taking steps/suggestions to check floods:

- 1. Drainage facility should be proper
- 2. Planting more trees
- 3. leaving the edges of roads without cementing
- 4. Percolation tanks and pits should be constructed