

Tenth class Biology model paper

Time 2h:45min

Marks: 50

Instructions:

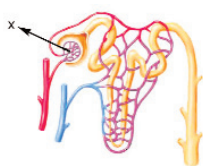
1. There are four sections and 33 questions in the paper.
2. Answers should be written in a given answer booklet.
3. There is an internal choice in Section - IV only.
4. Answer all the questions visibly & legibly.
5. 15 minutes is given for reading the question paper and 2.30 hours are given for answering

SECTION - Ii) Answer all the questions. $12 \times \frac{1}{2} = 6M$ ii) Each question carries $\frac{1}{2}$ mark.

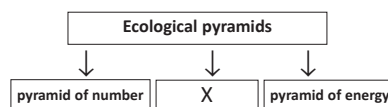
1. Complete the following Photosynthesis equation.
 $6CO_2 + 12 H_2O \rightarrow \square + 6H_2O + 6O_2$
2. Correct the sentence.
Plastics used in refrigerators and air conditioners causes global warming
3. Match the following and choose right answer?
 i) Haemoglobin () a) magnesium
 ii) fluorosis () b) Ferrum
 iii) Chlorophyll () c) fluorine
 A) i-c,ii-b,iii-a
 B) i-b,ii-c,iii-a
 C) i-c,ii-A,iii-b
4. Observe the paragraph and find the name of the scientist.
 I noted that there was a profound difference between the air in which combustion of a metal had been carried out and the one which had served for respiration.
 Who is "I" in the passage?
5. What is the name of this process?



6. Identify the "X" in the figure



7. Which part of the brain helps Murali to repair the damaged hardware part of the computer?
8. Arrange the cell cycle phases in an order?
 1) Sphase, 2) M phase
 3) G1 phase 4) G2 phase
9. Ramu lost some of the teeth in the upper jaw in the accident. Doctor told Ramu's dental formula is $\frac{0123}{2123}$. What are the teeth Ramu lost in the accident?
10. Monohybrid phenotype ratio is 3:1::genotype ratio is:
11. Complete the following table



12. What does this picture convey?

**SECTION - II**

i) Answer all the questions.

ii) Each question carries 1 mark.

 $8 \times 1 = 8 M$

13. Complete the following table.

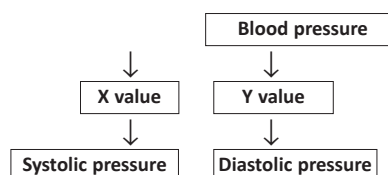
Reaction	Place of reaction
Light reaction	
Dark reaction	

14. Observe the picture carefully and answer the question?



Is there any possible to increase in temperature in this experiment why?

15. Observe the flow chart. What are "X" and "Y"?



16. From the latex of plant 'A' rubber is produced. Latex from Jatropa is a source of 'B'. Write 'A' and 'B'
17. Decrease in diameter of pupil when in light, increase in diameter of pupil when in dark, which system influence these functions.
18. What are the reproductive parts of a flower?
19. Expand ICRISAT and write where is it?.
20. Grass → grasshopper → frog → snake → Hawk.
 In this food chain, what is the trophic level of grass and hawk

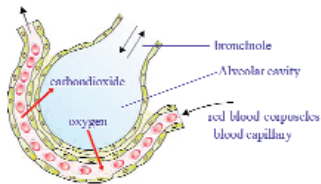
SECTION - III

i) Answer all the questions.

 $8 \times 2 = 16M$

ii) Each question carries 2 marks.

21. Murali told that "idlis will not digest in stomach" will you agree with the statement? why?
22. Raju said that we should use natural resources in proper way..Do you support this? Why?
23. What are the two systems involved in this picture?



24. Write slogans about organ donation to create awareness in people?
 25. Observe the arrangement of teeth and identify the parts mentioned as ABCD



26. What is the use of platelets? What happens if they are absent in blood?
 27. Suggest some environmental protection activities?
 28. Define Bioaccumulation and Biomagnification?

SECTION - IV

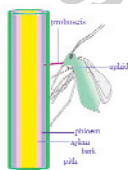
- i) Answer all the questions. 5 × 4 = 20M
 ii) Each question carries 4marks.
 iii) There is an internal choice in this Section.

29. a) Answer the following questions by observing the diagram showing the experiment?



- 1) What is the main aim of this experiment?
 - 2) what are the chemicals we use in this experiment?
 - 3) What is the use of KOH in this experiment?
 - 4) What is your observation in this experiment?
- (or)
- b) The secretions of stomach walls can digest even the hard bones. How does the digestive tract protect the stomach from these secretions? Explain on the basis of any experiment.

30. a) Write the differences between catabolic Process and Anabolic Process in plant? (or)
 b) Identify the wrongly mentioned parts and write their differences?



31. a) Read the paragraph and answer the following questions?
 Plants can get rid of excess water by a process like transpiration and guttation. Waste products may be stored in leaves, bark, and fruits. When these dead leaves, bark, and ripe fruits fall off from the tree then waste products in them are get rid off. Waste gets stored in the fruits in the form of solid bodies called Raphides. However several compounds are synthesized by the plants for their own use especially for defence. Many plants synthesize chemicals and store them in roots, leaves, seeds, etc., for protection against herbivores.

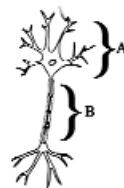
- 1) How do plants drain out the excess water?
- 2) Where do plants store the waste materials?
- 3) What are Raphides?
- 4) How plants protect from herbivores

(or)

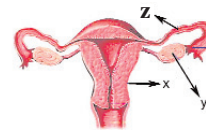
b) Study the table and answer the following questions?

Village	Total Area (acres)	Percentage area Irrigated	No.of wells
Village-1	3791	25	155
Village-2	297	15	175

- 1) What is the total irrigated area in acres, in Village-1?
 - 2) If one needs to irrigate all the land in Village-1, how many wells would be required?
 - 3) Though the number of wells is less in Village-1, the area under irrigation is more as compared to Village-2. How is this possible?
 - 4) What is the use of percolation pits?
32. a) Who decides the sex of the baby - mother or father? explain?
 (or)
 b) Suggest any three programs on prevention of soil pollution in view of avoiding pesticides.
33. a) Look at the diagram and answer the following questions?



- 1) Identify the parts 'A' and 'B' in the picture.
 - 2) Structural, functional unit of this system?
 - 3) Which part is made up of Schwann cells?
33. b) Look at the diagram and answer the following questions??



- 1) Identify the parts 'X' and 'Z' in the picture.?
- 2) Where graafian follicles are located?
- 3) Where fertilization takes place?

Answers

SECTION - I

1. C₆H₁₂O₆
2. Chlorofluorocarbons used in refrigerators and air conditioners causes global warming
3. B
4. Lavoisier
5. transpiration
6. Glomerulus
7. cerebrum
8. G1 phase, Sphase,G2 phase,Mphase.
9. upperjawscissors
10. 1 : 2 : 1
11. pyramid of biomass
12. sustainabledevelopment

SECTION - II

13.

Reaction	Place of reaction
Light reaction	grana
Dark reaction	stroma

14. A. No, because in this experiment they used dry seeds instead of sprouted seeds. Dry seeds do not respire.

15. X=120,Y=80
16. A.Heveabraziliensis (Rubber plant),
B. bio-diesel
17. Autonomous nervous system
18. The reproductive parts of the flower which possess the sex cells or germ cells called stamens and carpels.
19. International Crop Research Institute for Semi-Arid Tropics (ICRISAT). Hyderabad
20. Grass: producers
Hawk:Top carnivore.

SECTION - III

21. Idlis are carbohydrates. Carbohydrates needs basic medium for digestion. Gastric juice in the stomach contains hydrochloric acid, which is acidic medium so Carbohydrates are not digested in the stomach.
22. Raju's words are hundred percent true. We are responsible for providing natural resources to future generations. The use of these is now increasing day by day Therefore, the future generations will be happy if they are utilized orderly. Otherwise, they will not have access to natural resources. This causes a barrier to the progress of the country. Reduce use of natural resources and utilize alternative resources.
- 23 1) Respiratory system
2) Circulatory system
24. 1) Be a hero, be an organ donor
2) Recycle life, be an organ donor.
3) Have a heart, save a life
4) Donate Eyes....Live Twice.
5) Organ donation is a gift for life
25. A) molars
B) premolars
C) canine
D) Incisors
26. Platelets are tiny blood cells that help your body form clots to stop bleeding.
Platelets are responsible for blood clotting. If person is wounded and blood comes out platelets come into action and create blood clot by chemical reactions. If they are totally removed, blood cannot clot and person dies by blood loss in short time, if he gets wounded.
27. 1) Raising trees in vacant spaces
2) Construction of percolation Ponds
3) Management of programs such as vanamahotsavam and social forestry
4) Follow 4R (REDUCE, REUSE, RECYCLE, RESTORE) principle for better use of resources.
5) Use eco-friendly resources.
6) Raise awareness and understanding of the link between environment and development.
28. Bioaccumulation is the entering of pollutants in the food chain. The tendency of pollutants to concentrate as they move from one trophic level to the next is known as Biomagnification.

SECTION - IV

29. a) 1) CO₂ is necessary for the photosynthesis.
2) KOH Solution, Iodine solution.
3) KOH is used for the absorption of CO₂ in the bottle.
4) The part of the leaf outside the bottle turns to blue - black because starch is formed. The part of the leaf inside the bottle does not turns to blue - black because the CO₂ present inside the bottle is absorbed by KOH.

(or)

- b) 1) Take two similar green leaves.
2) Grease one leaf with petroleum jelly, leave the other free.
3) Add 1 or 2 drops of some weak acids on both the leaves.
4) Observe them after half-an-hour .
5) The leaf to which petroleum jelly was not applied effected by the acid.
6) We observe the colour of the leaf changes.
7) The other leaf was not affected by the acid because of petroleum jelly.

From the above activity we can conclude that mucus secreted by the walls of stomach protect it from the harmful effects of hydrochloric acid

- 30 a) Respiration is catabolic process and photosynthesis is an Anabolic process

catabolic Process	Anabolic Process
It occurs in all living organisms	It occurs only in all green plants, algae, and in some bacteria.
The entire process occurs in Mitochondria	The entire process occurs in Chloroplasts
Glucose and oxygen are the reactants of this process.	Carbon dioxide, water, and light energy are the reactants of this process.
Carbon dioxide, water, and energy (ATP) are the by-products.	Glucose, oxygen, and water are the by-products.
The chemical reaction of Respiration is $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$	The chemical reaction of photosynthesis is $6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$

(or)

30. b) Phloem should be in the place of xylem, xylem should be in the place of phloem

Xylem	Phloem
It supplies water and mineral salts to all parts of the plant	It supplies the food made in the leaves to all parts of the plant
Gives mechanical strength to the plant	Does not give mechanical strength to the plant
It consists of tracheids, vessel elements, xylem parenchyma, xylem sclerenchyma and xylem fibres.	It consists of four elements: sieve tubes, companion cells, phloem fibres, bast fibres, intermediary cells and the phloem parenchyma.
These tissues move in a Unidirectional. (only in one direction – upward direction)	These tissues move in a Bidirectional. (both ways – up and down)
The osmosis takes place in xylem.	The diffusion takes place in phloem

31. a) 1) transpiration and guttation.
2) Leaves, bark and fruits
3) The cells that store waste in fruits
4) Some plants store waste materials in seeds and leaves and convert them into poisonous substances and protect them from herbivores.

(or)

- b) 1) 25% of the village-1 can be irrigated i.e., Part 4 of the total area i.e. 950 acres.
2) 620 wells are required to irrigate all the land in village -1. (The number of wells required is 4 times i.e 620 wells are required).
3) The area of irrigated land is more than in the village-2, even

though the number of wells in the village-1 is less due to the practice of micro-irrigation and the percolation of groundwater through irrigation tanks.

4) Construction of percolation pits will increase ground water

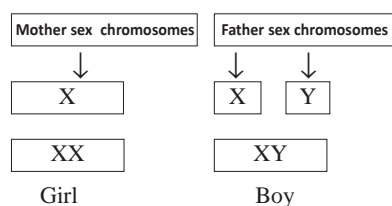
32. a) Each human cell contains 23 pairs (46) of chromosomes. Out of 23 pairs 22 pairs of chromosomes are autosomes and the pair of sex chromosomes. There are two types of sex chromosomes, one is 'X' and the other is 'Y'. These two chromosomes together determine the sex of an individual. Females have two 'X' chromosomes in their cells (XX). Males have one 'X' and one 'Y' chromosomes in their cells (XY).

All the gametes (ova) produced by a woman have only X chromosomes.

The gametes (sperm) produced by a man are of two types one with X chromosome and other Y chromosome.

If the sperm carries Y chromosome and fertilises the ovum containing (X chromosome). Then the baby will have Xy condition. So the baby will be a boy.

So father decides the sex of the baby.



(or)

32. b) Pesticides are the toxic chemicals which are used to destroy pests they not only disturb the environment but also pollute the soil.

To prevent soil pollution caused by pesticides following activities should be implemented.

- 1) Rotation of crops
- 2) Biological pest control
- 3) Development of genetic resistant strains.

1) **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.

2) **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.

3) **Development of genetic resistant strains:**

- I. Now a days using genetic engineering pest resistant strains are being produced.
- II. If we use these, crops ever get effected by the pest, so no need to use the pesticides.

33. a)

- 1) (a) cyton, (b) Axon
- 2) Neuron. 3) Mylian sheath

(or)

- b) 1) X:Uterus, Z: Fallopian tubes.
- 2) Ovary 3) Fallopian tubes.