

GENERAL SCIENCE, Paper - II

(Biological Sciences)

(English version)

Time : 2 hours 45 min.]

[Maximum Marks : 40

Instructions :

- (i) *The Question paper comprises of FOUR Sections - I, II, III and IV.*
- (ii) *All the Questions are **compulsory**.*
- (iii) *There is no overall choice. However there is internal choice to the Questions under Section-I.*
- (iv) *In the time duration of 2 hrs. 45 minutes, 15 minutes of time is exclusively allotted to read and understand the Question paper.*

SECTION - I

Note :

(4×4=16 marks)

- (i) Answer **all** the questions.
- (ii) Each question carries **FOUR** marks.
- (iii) There is internal choice for each question. Only one option from each question is to be attempted.
- (iv) Answer each question in 8 to 10 sentences.

1. How can you say that Kidney is suitable for filtration of biological waste from blood in man ?

OR

What is called pumping station in human body ? Explain its structure with suitable diagram.

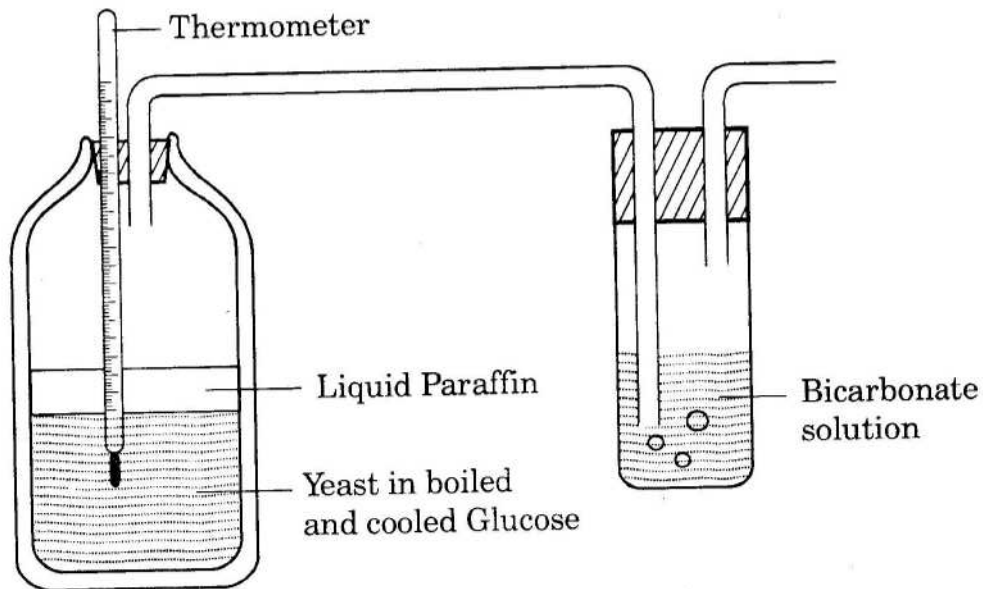
2. Write the differences between -
- (1) Mitosis - Meiosis
 - (2) Photosynthesis - Respiration

OR

Explain the changes involved in the formation of seed from Ovule.

3. What materials are required to prove that Oxygen is produced during Photosynthesis in the presence of light ? What procedure we need to follow to perform the above experiment ?

OR



Observe the above diagram and answer the following questions :

- (1) What does the above setting (diagram) indicate ?
- (2) Why boiled and cooled Glucose is covered with Paraffin ?
- (3) What is the use of adding diazine green to Glucose solution ?
What change you notice in Glucose solution ?
- (4) Why lime water is used in this experiment ?
- (5) Why bulb of thermometer is dipped in the Glucose water ?

4. Read the following table and answer the questions given below :

Sl. No.	Name of the gland	Location	Hormone secreted	Response of the body to hormone
1.	Pituitary	Floor of brain	Somatotropin	Growth of bone.
			Gonadotropin	Activity of ovary and testis.
2.	Thyroid	Neck	Thyroxine	General growth rate and metabolic activity.
3.	Ovary	Lower abdomen	Estrogen	Growth of the uterus and skeleton of the pelvis.
4.	Testis	Scrotal sac	Testosterone	Growth of male secondary sexual characters.

- (1) Write the importance of glands and hormones.
- (2) Which hormone is responsible for growth of bone ?
- (3) What happens if testosterone is not secreted ?
- (4) Where does the gland that secretes thyroxine is located ?
- (5) Which glands are common in male and female ?

OR

Village	Type of farmer	Income per acre on Crops			
		Paddy	Cotton	Mirchi	Maize
A	Small	7,500	9,300	5,200	5,000
	Large	26,700	38,000	16,700	12,900
B	Small	7,200	8,750	4,900	5,100
	Large	32,900	42,000	18,400	13,700

Observe the above table and answer the following questions.

- (1) Which crop is most suitable to cultivate for small farmer in both the villages ?

- (2) If you are a large farmer, which crop do you select to cultivate ?
- (3) What similarities you have identified in village A and village B ?
- (4) Which is the lowest income crop ?
- (5) Is there any relationship between production of crops and income ?
How ?

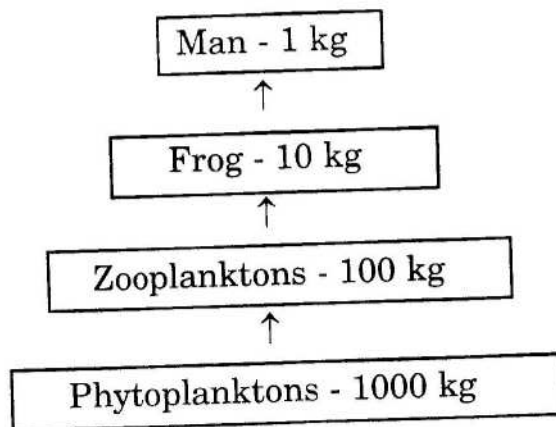
SECTION - II

(6×2=12 marks)

Note :

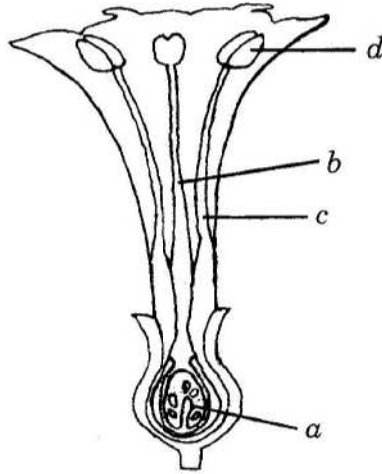
- (i) Answer **all** the questions.
- (ii) Each question carries TWO marks.
- (iii) Answer each question in 4 to 5 sentences.

5. "Forest is a renewable resource." Do you agree ? Justify.
6. Draw the structure of an excretory organ, which contains Bowman's capsule and loop of Henle and label it.
7. Explain the Flow-chart given below :



8. What questions do you pose to your teacher to understand "blood clotting" ?
9. What happens if Meiosis does not take place in reproductive cells ?

10. Identify the flower parts *a*, *b*, *c*, *d* and write their main function.

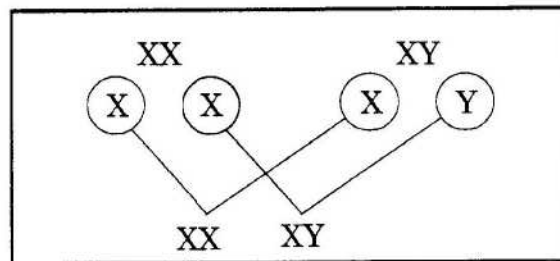


SECTION - III

Note :

(7×1=7 marks)

- (i) Answer **all** the questions.
 - (ii) Each question carries ONE mark.
 - (iii) Answer each question in 1 or 2 sentences.
11. To create awareness on “Water conservation” in your locality, what slogan you will suggest ?
 12. Why stomach is structured like a bag rather than like a tube ?
 13. Observe the following Flow-chart and answer the question.



Who decides the sex of the baby – mother or father ? How ?

14. Why KOH is used in Moll's half leaf experiment ?
15. A plant which grows near a window bends towards Sunlight. Write the reason for it .
16. Prepare your own tabular column to get information about food deficiency diseases from a doctor.
17. What examples you will give to prove that Lamarckism is not correct ?

SECTION - IV

Note :

(10 × $\frac{1}{2}$ = 5 marks)

- (i) Answer **all** the questions.
- (ii) Each question has FOUR choices. Choose the correct answer for each question and write the relevant alphabet [A, B, C, D] against the question number in your answer booklet.
- (iii) Each question carries $\frac{1}{2}$ mark.
18. Deficiency of Folic acid causes
- (A) Anaemia
- (B) Pellagra
- (C) Glossitis
- (D) Rickets
19. Acid present in Gastric juice
- (A) Sulphuric acid
- (B) Hydrochloric acid
- (C) Nitrous acid
- (D) Phosphoric acid

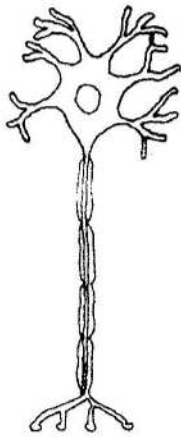
20. Identify the mis-matched pair

- (A) Haustoria - Cuscuta
- (B) Testosterone - Ovary
- (C) Granum - Chloroplast
- (D) Epiglottis - Mouth

21. How sperm enters the egg cell ?

- (A) Tears a hole in membrane.
- (B) Dissolves the membrane with chemicals.
- (C) Bites through the membrane with teeth.
- (D) Squeezes through gaps in the membrane.

22. Identify the diagram :



- (A) Algae
- (B) Neuron
- (C) Blood cell
- (D) Mitochondria

23. Outer membrane of lungs is called Pleura. Name the outer membrane of Heart.

- (A) Hypercardium
- (B) Pericardium
- (C) Apicardium
- (D) Upper cardium

24. A person has lost control on emotions. Which part of brain is responsible for it ?
- (A) Cerebrum
 - (B) Diencephalon
 - (C) Mid brain
 - (D) Cerebellum
25. Identify the animal in which excretory organ is absent.
- (A) Bird
 - (B) Amoeba
 - (C) Sponge
 - (D) B and C
26. Which of the following practice is suitable to farmer with less water resource ?
- (i) Select short term crops.
 - (ii) Cultivate commercial crops.
 - (iii) Adapt drip irrigation system.
 - (iv) Crop holiday.
- (A) (i), (ii)
 - (B) (i), (ii), (iii)
 - (C) (i), (iv)
 - (D) (iii), (iv)
27. Which plant hormone is responsible for closing of Stomata ?
- (A) Abscisic acid
 - (B) Auxin
 - (C) Cytokinin
 - (D) Ethylene