

Model Question Paper

Class 11th Biology

2024-2025

Time : 3 Hrs

MM : 60

Instruction:-

1. All questions are compulsory.
2. The question paper consists of four sections: A, B, C, and D.
3. Section A contains 12 multiple-choice questions of 1 mark each.
4. Section B contains 10 very short answer questions of 2 marks each.
5. Section C contains 6 short answer questions of 3 marks each.
6. Section D contains 2 long answer questions of 5 marks each.
7. Draw neat and labelled diagrams wherever necessary.

SECTION A: Multiple Choice Questions

1. The reaction centre in PS II has an absorption maximum at
(a) 660 nm (c) 680 nm (b) 780 nm (d) 700 nm (1)

2. The transverse section of a plant shows following anatomical features:
- (i) Large number of scattered vascular bundle surrounded by bundle sheath
 - (ii) Large conspicuous parenchymatous ground tissue
 - (iii) Vascular bundles conjoint and closed
 - (iv) Phloem parenchyma absent

Identify the category of plant and its part.

- (a) Monocotyledonous stem
(b) Monocotyledonous root
(c) Dicotyledonous stem
(d) Dicotyledonous root (1)

3. Which ion plays a crucial role in muscle contraction by binding to troponin?

- a) Sodium b) Potassium c) Calcium d) Magnesium (1)

4. Which hormone is commonly known as the "stress hormone" in plants?

- A) Auxin B) Gibberellin C) Absciscic acid D) Cytokinin (1)

5. Identify the lipid structure in the diagram below:

Glycerol backbone
|
| — Fatty acid Chain
|
| — Fatty acid Chain
|
| — Fatty acid Chain

What type of lipid does the diagram represent?

- a) Phospholipid
 - b) Triglyceride
 - c) Cholesterol
 - d) Sphingolipid
- (1)

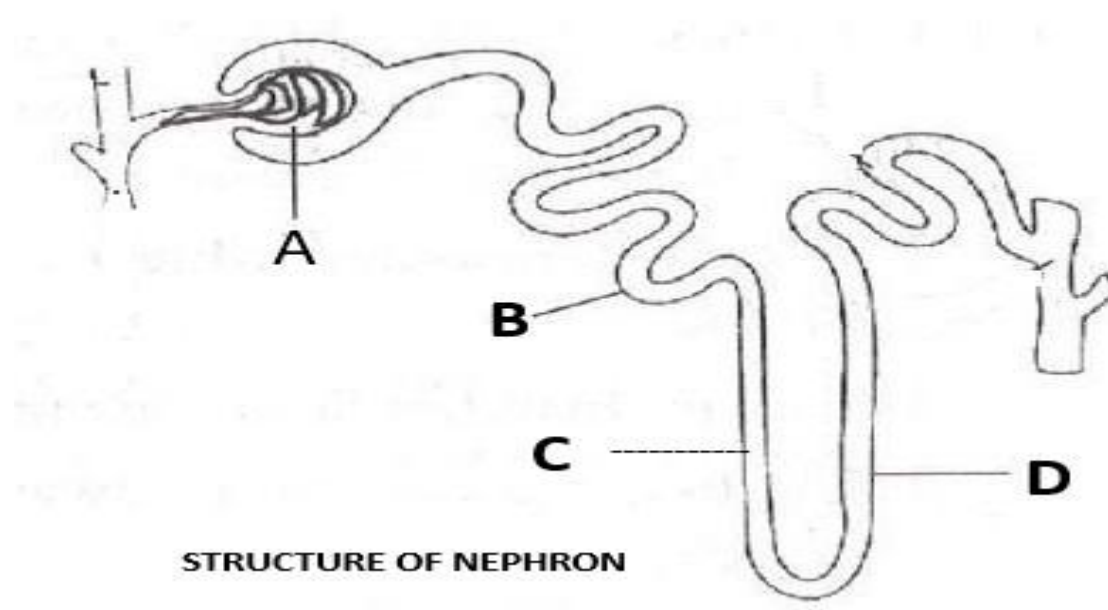
6. One scientist cultured *Cladophora* in a suspension of *Azotobacter* and illuminated the culture by splitting light through a prism. He observed that bacteria accumulated mainly in the region of

- (a) violet and green light
 - b) indigo and green light
 - (c) orange and yellow light
 - (d) blue and red light.
- (1)

7 . Persons with 'AB' blood group are called as "Universal recipients". This is due to

- (a) absence of antibodies, anti-A and anti-B, in plasma
 - (b) absence of antigens A and B on the surface of RBCs
 - (c) absence of antigens A and B in plasma
 - (d) presence of antibodies, anti-A and anti-B, on RBCs.
- (1)

8. In the labelled diagram mentioned below, water absorption does not occur in the labelled part as



.A b) B c) C d) D (1)

9. In a cross-section of a root, which layer is directly affected by the presence of Casparian strips?

A) Epidermis B) Cortex C) Endodermis D) Vascular tissue (1)

10. Select the incorrect statement regarding synapses.

- (a) The membranes of presynaptic and postsynaptic neurons are in close proximity in an electrical synapse.
- (b) Electrical current can flow directly from one neuron into the other across the electrical synapse.
- (c) Chemical synapses use neurotransmitters.
- (d) Impulse transmission across a chemical synapse is always faster than that across an electrical synapse.

(1)

Question Nos. 11 & 12 consist of two statements- Assertion (A) and Reason (R).
Answer these questions selecting the appropriate option given below

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
- (b) Both Assertion and Reason are true, but Reason is not the correct explanation of Assertion
- (c) Assertion is true, but Reason is false
- d) if both Assertion and Reason are False.

11. Assertion: Ferns require water for fertilisation. (1)
Reason: Ferns are amphibians of the plant kingdom.

12. Assertion: Amphibians are cold blooded animals. (1)
Reason : Amphibians aestivate.

13. Define venation. Name its two types. Name the type of venation found inMONOCOT plants. (2)

14. Differentiate between Racemose and Cymose inflorescence OR (2)
Discuss the Different types of vascular bundles in plants

15. What is a centromere? How does the position of centromere form the basis of .. classification of chromosomes. Support your answer with a diagram showing the .. position of centromere on different types of chromosomes. (2)

16. Why are the mustard flowers called Hypogynous flowers? (2)
.. Define Epigynous flowers. OR .
Why is Apple called False Fruit? Define True Fruit.

17. Name the following terms: a) The energy currency of a cell is (2)
.. b)The kitchen of the cell is
c) Why does Cellulose does not change Iodine colour as Starch and Glycogen

18. Which of the heart tissues is called the pacemaker of our heart. Why? (2)

19. Give example(s) of: (2)
(a) Hyperglycemic hormone
(b) Hypercalcemic hormone
(c) Gonadotrophic hormones
(d) hypoglycemic hormone

20. Answer the following:
(a) Which part of the ear determines the pitch of a sound?
(b) Which part of the human brain is the most developed?

(c) Which part of our central neural system acts as a master clock?

d) Which part of the eye has only CONE cells? (2)

21. Draw labelled diagram of Bacteria and label a) Cell wall b) Plasma membrane, c) Mesosome d) Nucleoid OR

Draw labelled diagram of Eukaryotic Cell and label

, a) RER and SER b) Mitochondria c) Golgi Body d) Chromatin (2)

22. What are the Characteristics of five kingdom Classification. (2)

SECTION C(Short Answer)

23.. Differentiate between: a) Eukaryotic cell and prokaryotic cell

b) DNA and RNA (3)

24. Define BINOMIAL Nomenclature . Who proposed it? List down 4 important rules of Binomial nomenclature. (3)

25. Name the plant group also called Naked seed plants. Enlist their 5-6 characters.

OR Name the plant group also called Snakes of Plant Kingdom. Enlist their 5-6 ... characters. .

(3)

26. Differentiate between

a) ESSENTIAL AMINO ACIDS AND NON-ESSENTIAL AMINO ACIDS

b) Mitosis and meiosis (3)

27. Match the following Column I and Column II mentioned below :

Column I	Column II
(a) Eosinophils	(i) Coagulation
(b) RBC	(ii) Universal Recipient
(c) AB Group	(iii) Resist Infections
(d) Platelets	(iv) Contraction of Heart
(e) Systole	(v) Gas transport

(3)

28. a) Where does the TCA cycle occur in plant cells?

b) Name the substrate molecule used at the start of the TCA cycle?

. . c) How many molecules of NADH, FADH₂ and ATP are produced by one . turn of the TCA Cycle?

OR

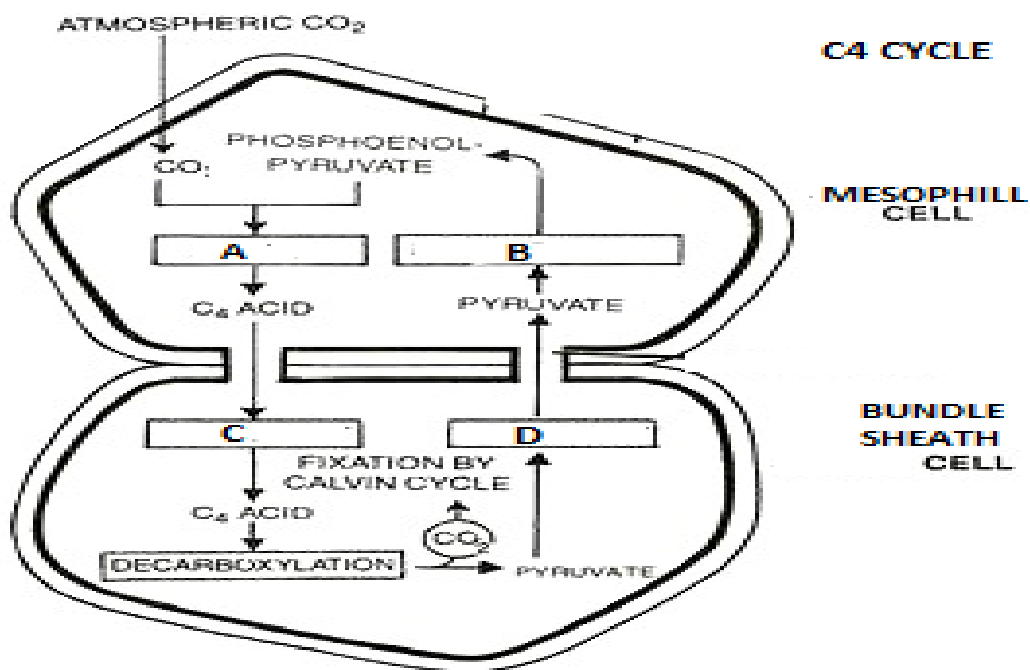
- a) Where does the Calvin cycle occur in plant cells?
- b) Name the acceptor molecule of CO₂ in the Calvin cycle?
- c). How many molecules are consumed by one turn of the Calvin Cycle?
NADPH₂, and ATP (1+1+1=3)

SECTION D LONG ANSWERS

- 29. a) Explain the transport of Oxygen and CO₂ in blood
- . b) What is the significance of Counter current Mechanism in Urine . . .
... formation.
-c) Define Micturition .
- .. d) Name the Pigment responsible for the yellow colour of Urine.

2+1+1+1= (5)

- 30. GIVE SCHEMATIC REPRESENTATION OF HATCH and SLACK 's Cycle.



- a) NAME THE PRODUCT A,B,C,D,
- b) Name the Plants having this cycle that grow in hot, arid climates.
- c) Name the first stable compound formed.
- d) Name the special leaf character of these plants . (2+1+1+1=5)

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HP BOARD OF SCHOOL EDUCATION DHARAMSHALA**CHAPTER WISE MARKS DISTRIBUTION**CLASS 11th SUBJECT: **BIOLOGY** TOTAL MARKS: 60

Sr. No		Chapters	Total Marks
I	Diversity of Living Organisms	Living World	12
		Biological Classification	
		Plant Kingdom	
		Animal Kingdom	
II	Structural Organisation in Plants and Animals	Morphology of Flowering plants	8
		Anatomy of Flowering plants	
		Structural Organization in Animals	
III	Cell: Structure and Function	Cell: The Unit of Life	11
		Biomolecules	
		Cell Cycle and Cell Division	
IV	Plant Physiology	Photosynthesis in Plants	14
		Respiration in Plants	
		Plant Growth and Development	
V	Human Physiology	Breathing and Exchange of Gases	15
		Body Fluid and its Circulation	
		Excretory Products and their Elimination	
		Locomotion and Movement	
		Neural Control and Coordination	
		Chemical Control and Integration	
		Total	60

BLUEPRINT FOR MCQs

S No	Name of Unit	Number of Questions
1	Concept Based/Direct Questions	2
2	Understanding & Knowledge Based	3
3	Higher Difficulty Level	3
4	Assertion & Reason	4
	TOTAL	12