

BUDHA DAL PUBLIC SCHOOL, PATIALA
Final Examination (6 March 2026)

Class XI (Science)
Subject - Biology
(Set - B)

M.M. 70

Time: 3hrs.

General Instructions:

- (i) All questions are compulsory.
- (ii) The question paper has five sections and 33 questions. All questions are compulsory
- (iii) Section-A has 16 questions of 1 mark each; Section-B has 5 questions of 2 marks each; Section-C has 7 questions of 3 marks each; Section-D has 2 case-based questions of 4 marks each; and Section-E has 3 questions of 5 marks each.
- (iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions
- (v) Wherever necessary, neat and properly labelled diagrams should be drawn.

Section - A

- Q1. Lamprey (Petromyzon) belongs to
a) Chondrichthyes b) Osteichthyes c) Agnatha d) Amphibia
- Q2. Holdfast, stipe and frond constitutes the plant body in case of
a) Rhodophyceae b) Cylorophyceae c) Phaeophyceae d) All of the above
- Q3. Identify the correct features of Mango and Coconut fruits
i) In both fruit is a drupe
ii) Endocarp is edible in both
iii) Mesocarp in Coconut is fibrous, and in Mango it is fleshy
iv) In both, fruit develops from monocarpellary ovary.
Select the correct option from below:
a) (i) and (ii) only b) (i), (iii) and (iv) only c) (i), (ii) and (iii) only d) (i) and (iv) only
- Q4. Frog has
a) Five fingers and four toes b) Four fingers and five toes
c) Five fingers and five toes d) Four fingers and four toes
- Q5. An organic substance which binds to enzyme and is essential for activity of enzyme is
a) Coenzyme b) Isoenzyme c) Holoenzyme d) Apoenzyme
- Q6. Match the columns
- | Column I | Column II |
|-----------------|-----------------|
| A) Protein | (i) SER |
| B) Lipid | (ii) Golgi body |
| C) Glycoprotein | (iii) Lysosome |
| D) Hydrolytic | (iv) RER |
- a) A - i, B - ii, C - iii, D - iv
b) A - iv, B - ii, C - i, D - iii
c) A - iv, B - i, C - ii, D - iii
d) A - i, B - iii, C - ii, D - iv
- Q7. Hormone used in promoting malt production is
a) IAA b) IBA c) Gibberellin d) Cytokinin
- Q8. The reaction that is responsible for the primary fixation of CO₂ is catalysed by
a) RuBP carboxylase b) PEP carboxylase c) Both (a) and (b) d) PGA synthase
- Q9. R.Q. is infinity in case of
a) Respiration of Fats b) Respiration of proteins
c) Aerobic respiration of carbohydrates d) Alcoholic fermentation
- Q10. Acromegaly is due to
a) Hyposecretion of GH b) Hypersecretion of GH
c) Hyposecretion of ACTH d) Hypersecretion of ACTH

B-



Q11. Which is in higher concentration in interstitial fluid than inside the resting neuron
a) Na^+ b) K^+ c) Both Na^+ and K^+ d) Astrocytes

Q12. Excretion in Cockroach occurs through
a) Nephridium b) Parotid gland c) Coxal gland d) Malpighian tubules

Each of the following questions (Q.No. 13 to Q.No 16) consists of two statements, one is Assertion (A) and the other is Reason (R). Give answer:

- a) Both Assertion (A) and Reason (R) true and Reason (R) is the correct explanation of Assertion (A).
- b) Both Assertion (A) and Reason (R) are true but Reason (R) is not a correct explanation of Assertion (A).
- c) Assertion (A) is true but Reason (R) is false.
- d) Assertion (A) is false but Reason (R) is true.

Q13. Assertion : During inhalation, external intercostals and phrenic muscles contract.
Reason : Internal intercostals muscles contract during normal exhalation.

Q14. Assertion : Complex V of electron transport system is involved in synthesis of metabolic water.
Reason : It produces ATP with the help of ATP synthase.

Q15. Assertion : Bivalents develop during zygotene of prophase I.
Reason : They appear tetrads during diplotene.

Q16. Assertion : Bats and whales are classified as mammals.
Reason : Bats and whales have four chambered heart.

Section - B

Q17. Provide the scientific term for the following:

- a) The flat and expanded portion of a leaf
- b) Sterile stamen is called

Q18. Amino acids are substituted methanes. Justify. Why are they called α -amino acids?

Q19. How does cytokinesis in plant cells differ from that in animals cells?

- Q20. a) Name (i) the band of nerve fibres that joins the two cerebral hemispheres in mammals and (ii) the structure that cerebrum wraps around
- b) Why is the cerebral cortex referred to as grey matter?

Q21. What is complex IV in ETS of mitochondria? Mention its components.

OR

Define plasticity in plants. Give an example.

Section - C

Q22. a) Mention the different types of respiratory organs found among echinoderms.

- b) Differentiate between the group Agnatha and Gnathostomata. Name the class present under Agnatha with example.

Q23. Name the type of aestivation found in the following

- a) Calotropis b) Cotton and explain it also

Q24. Describe the male reproductive system of a frog.

- Q25. a) What is G_0 (quiescent phase) of cell cycle?
- b) Analyse the events during every stage of cell cycle and notice how the following two parameters change
 - (i) number of chromosomes (N) per cell
 - (ii) amount of DNA content (C) per cell

B-



Q26.

- How many molecules of ATP are produced by the oxidation of one molecule of NADH and $FADH_2$, respectively?
- Why is respiratory pathway called amphibolic pathway?
- A respiratory substrate having respiratory quotient (RQ) 0.9 is used by our body during prolonged fasting. Name the substance.

Q27. Draw a well labelled diagram of Sarcomere

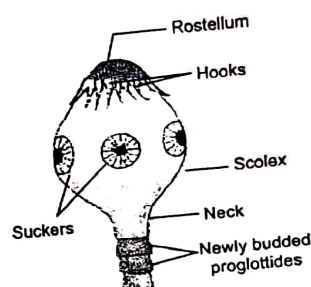
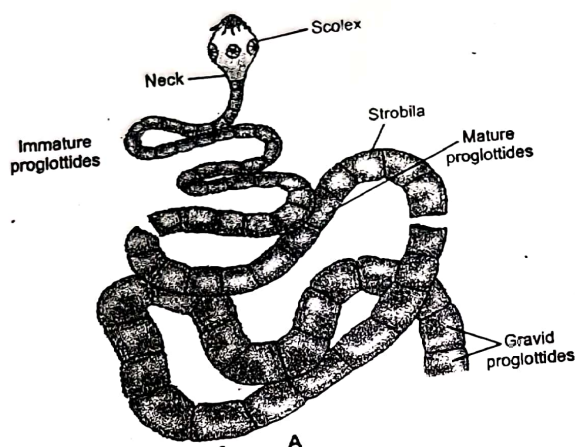
Q28. How is respiration regulated in human beings? Explain.

OR

- Describe the role played by diaphragm and intercostal muscles in inspiration.
- Why do workers in industries that involve grinding or breaking of stones suffer from inflammation of lungs? How can they be protected?

Section - D

Q29. Study the diagrams carefully and answer questions (a) to (d) by choosing correct options:



- (a) What is the name of the animal ?
 (A) Pork Tapeworm
 (C) Liver Fluke

- (B) Blood Fluke
 (D) Beef Tapeworm.

- (b) Where does it occur in human body ?
 (A) Bile ducts
 (C) Lymph nodes

- (B) Human intestine
 (D) Oesophagus.

- (c) What is the function of hooks and suckers ?
 (A) To kill invading antibodies
 (C) Attachment to the intestinal wall

- (B) To kill macrophages and other phagocytic cells
 (D) Attachment to bile ducts.

- (d) Gravid proglottides contain
 (A) Unfertilised eggs
 (C) Bladderworms

- (B) Just fertilised eggs
 (D) Onchospheres.

Q30. Read the following and answer the questions given below:
 The amount of filtrate formed by the kidneys per minute, is called glomerular filtration rate (GFR). In a healthy human, the GFR is approximately 125 mL/minute. Study the flow chart given and answer the questions to fill in the blanks.

The (A) cells release Renin,
 when there is a fall in (B)



Renin converts (C) in the
 blood into (D)



B-3



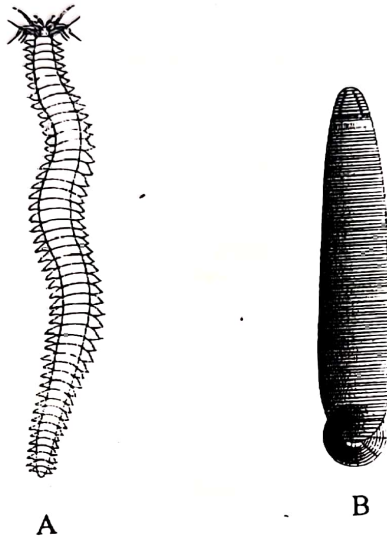
(D) activates the adrenal cortex to release (E)
 ↓
 (E) raises the reabsorption of Na⁺ and water
 and raises the (F)

- Name the cells (A) which release rennin
 - Mention what (B) represents.
 - Identify (C), (D), (E) and (F) in the flow chart
- OR
- When is ANF released? Mention its source and how it does function as a check to the above mentioned mechanism.

Section - E

231.

- Two animals of Phylum Annelida are shown in the picture given below. Observe them and answer the questions that follow:



A

B

- Identify and write the scientific names of the animals A and B.
 - Write two major differences between them.
- Some animals of phylum Cnidaria show metagenesis. What is it? Give an example of animal that shows metagenesis.
- OR

- Write any four characteristic features of Euglenoids.
- The heterotrophic bacteria are the most abundant in nature and have a significant impact on human affairs. Mention any four such effects of bacteria on human affairs.
- Name two symbiotic associations of fungi.

2.

- Explain the process of blood clotting.
 - Why human heart is called Myogenic heart?
- OR

Explain cardiac cycle with help of schematic representation.

3.

- Draw well labelled diagram of V.S. of maize
 - Differentiate the type of fruit found in Mango and Coconut
- OR

- Draw a pie diagram to show various phases of cell cycle and main events that occur in it.
- Name the stages of cell division in which following events occur
 - Pairing of homologous chromosome
 - Crossing over
 - Tetrad formation
 - Chiasmata formation

B-1

