THE VILLAGE
INTERNATIONAL SCHOOL
"We Nurture Dreams"

AIM HIGH, TOGETHER WE FLY

Biology (044)

FIRST TERMINAL EXAMINATION

GRADE XI - 2024-25 Time: 3 Hours

Date:01/10/2024 Max. Marks: 70

General Instructions:
1.All questions are compulsory.
2.The question paper has five sections and 33 questions. All questions are compulsory.
3.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.
4.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.
5.Wherever necessary, neat and properly labelled diagrams should be drawn.

Qn. No		Mark
	SECTION A	
1	Apocarpous is the term given to a) More than one carpel fused together. b) More than one carpel which may be free. c) One carpel only d) None of the above	1
2	Which of the following represents the depolarisation of the ventricles? a) P-wave b) T-wave c) QRS complex d) PQ interval	1
3	Which among the following is incorrect about Echinoderms? a) Larval stage is bilaterally symmetrical and adults are radially symmetrical b) They are dioecious and most of the times the fertilization is external	1

	c) The larvae is immobile and bilaterally symmetrical d) They have a complete digestive system with mouth on the ventral side and anus on the dorsal side	
4	Naked cytoplasm, multinucleated and saprophytic are the characteristics of a. Monera b. Protista c. Fungi d. Slime molds	1
5	Fusion of two motile gametes which are dissimilar in size is termed as a. Oogamy b. Isogamy c. Anisogamy d. Zoogamy	1
6	Which one of the following statements is incorrect? a. In cockroaches and prawns excretion of waste material occurs through malpighian tubules. b. In ctenophores, locomotion is mediated by comb plates. c. In Fasciola, flame cells help in excretion d. Earthworms are hermaphrodites and yet cross fertilisation take place among them	1
7	Respiratory process is regulated by certain specialised centres in the brain. One of the following centres can reduce the inspiratory duration upon stimulation a. Medullary inspiratory centre b. Pneumotaxic centre c. Apneustic centre d. Chemosensitive centre	1
8	From the following relationships between respiratory volume and capacities and mark the correct answer i. Inspiratory capacity (IC) = Tidal Volume + Residual Volume ii. Vital Capacity (VC) = Tidal Volume (TV) + Inspiratory Reserve Volume (IRV) + Expiratory Reserve Volume (ERV). iii. Residual Volume (RV) = Vital Capacity (VC) – Inspiratory Reserve Volume (IRV) iv. Tidal Volume (TV) = Inspiratory Capacity (IC) – Inspiratory Reserve Volume (IRV)	1

9	Birds and mammals share one of the following characteristics as a common feature. a. Pigmented skin b. Pneumatic bones c. Viviparity d. Warm blooded	1
10	Which among the following is not an asexual mode in bryophytes? a) Budding b) Fragmentation c) Gemmae d) Sporophyte formation	1
11	Cyanobacteria are classified under a. Protista b. Plantae c. Monera d. Algae	1
12	Those bronchioles which divide into alveolar ducts are called as: a) Tertiary bronchioles b) Secondary bronchioles c) Primary bronchioles d) Respiratory bronchioles	1
DIRECTION : Q. No. 13-16: Consist of two statements— Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:		
13	Assertion : Inspiration occurs due to muscular relaxation. Reason : During inspiration, the diaphragm and external intercostal muscle contract simultaneously. (a) Both A and R are true and R is the correct explanation of A. (b) Both A and R are true and R is not the correct explanation of A. (c) A is true but R is false. (d) A is False but R is true.	1
14	Assertion: In ctenophores, digestion is chiefly extracellular.	1

	Reason: Digestive tract is incomplete in ctenophores. (a) Both A and R are true and R is the correct explanation of A. (b) Both A and R are true and R is not the correct explanation of A. (c) A is true but R is false. (d) A is false but R is true.	
15	Assertion: Pneumatophores are seen in Rhizophora. Reason: From the region of elongation, some of the epidermal cells form root hairs (a) Both A and R are true and R is the correct explanation of A. (b) Both A and R are true and R is not the correct explanation of A. (c) A is true but R is false. (d) A is False but R is true.	1
16	Assertion: Rhodophyta is red in colour due to abundant formation of r-phycoerythrin. Reason: r-phycoerythrin is able to absorb blue green wavelengths of light and reflect red colour. (a) Both A and R are true and R is the correct explanation of A. (b) Both A and R are true and R is not the correct explanation of A. (c) A is true but R is false. (d) A is false but R is true.	1
	Section—B	
17	What is meant by double circulation? What is its significance?	2
18	Cigarette smoking causes emphysema. Give reason.	2
19	Endoparasites are found inside the host body. Mention the special structure, possessed by these and which enables them to survive in those conditions.	2

20	Both gymnosperms and angiosperms bear seeds, then why are they classified separately?	2
21	What is the significance of atrio-ventricular node and atrio-ventricular bundle in the functioning of heart?	2
	Section—C	
22	Give the characteristic features of the following citing one example of each a. Chondrichthyes and osteichthyes b. Urochordata and cephalochordata	3
23	Define the following terms: (a) aestivation (b) placentation (c) actinomorphic (d) zygomorphic	3
24	What observable features in Trypanosoma would make you classify it under kingdom Protista?	3
25	Diatoms are also called as 'pearls of ocean', why? What is diatomaceous earth?	3
26	Explain the role of the neural system in regulation of respiration.	3
27	Give an example for each of the following a. A viviparous animal b. A fish possessing a poison sting c. A fish possessing an electric organ d. An organ, which regulates buoyancy e. Animal, which exhibits alternation of generation f. Oviparous animal with mammary gland	3
28	Write semi-technical description of the family Solanaceae. Also draw their floral diagram.	3
	Section—D	
29	Read the following and answer any four questions: In human beings, the lungs are situated in the thoracic chamber which is formed dorsally by the vertebral column, ventrally by the sternum, laterally by the ribs, and on the lower side by the dome-shaped diaphragm. The anatomical setup of the lungs in the thorax is such that any change in the volume of the thoracic cavity will be reflected in the lung (pulmonary) cavity. Such an arrangement is essential for breathing.	4

	Breathing involves two stages – inspiration and expiration. During inspiration, the atmospheric air is drawn in and during expiration, the alveolar air is released out.
	
	1. On average, a healthy human breathes _____ times/minute.
	    1. 12 – 16
	    2. 18 -20
	    3. 70 – 72
	    4. 80 – 84
	2. Air is sucked into the lungs by_____ .
	    1. Ribs lift up
	    2. Diaphragm flattens
	    3. Ribs flatten
	    4. Both ribs lift up and diaphragm flattens
	3. What term is used for the volume of air inspired or expired during normal respiration?
	    1. Tidal volume
	    2. Inspiratory Reserve Volume
	    3. Residual Volume
	    4. Vital Capacity
	4. The residual volume of air is _____.
	    1. 6000 to 8000 mL
	    2. 2500 mL to 3000 mL
	    3. 1000 mL to 1100 mL
	    4. 1100 mL to 1200 mL	

30	Animals in which the cells are arranged in two embryonic layers, an external ectoderm and an internal endoderm, are called diploblastic animals, e.g., coelenterates. An undifferentiated layer, mesoglea, is present in between the ectoderm and the endoderm. Coelom – Presence or absence of a cavity between the body wall and the gut wall is very important in classification. The body cavity, which is lined by mesoderm is called coelom. Animals possessing coelom are called coelomates, e.g., annelids, molluscs, arthropods, echinoderms, hemichordates and chordates. In some animals, the body cavity is not lined by mesoderm, instead, the mesoderm is present as scattered pouches in between the ectoderm and endoderm. Such a body cavity is called pseudocoelom and the animals possessing them are called pseudocoelomates, e.g., aschelminthes. The animals in which the body cavity is absent are called acoelomates, e.g., Platyhelminthes. Segmentation – In some animals, the body is externally and internally divided into segments with a serial repetition of at least some organs. For example, in earthworm, the body shows this pattern called metameric segmentation and the phenomenon is known as metamerism. Notochord – It is a mesodermally derived rod-like structure formed on the dorsal side during embryonic development in some animals. Animals with notochord are called chordates and those animals which do not form this structure are called non-chordates, e.g., porifera to echinoderms.	4

	1.) Diploblastic animals are characterised by _____. a) External ectoderm cell arrangement b) Internal endoderm cell arrangement c) Both a and b d) None of the above 2.) In coelomates, body cavity is surfaced by_____ a) Ectoderm b) Mesoderm c) scattered pouches d) Endoderm 3.) Name the layer is present in between the ectoderm and the endoderm in diploblastic animals. 4.) What is mean by metameric segmentation and metamerism?	
SECTION-E		
31	a)Define a cardiac cycle and the cardiac output b)Sino-atrial node is called the pacemaker of our heart. Why? c)Describe the evolutionary change in the pattern of heart among the vertebrates	5
32	a)Define oxygen dissociation curve. Can you suggest any reason for its sigmoidal pattern? b)Diffusion of gases occurs in the alveolar region only and not in the other parts of respiratory system. Why? c)What are the major transport mechanisms for CO2?	5
33	Comment upon the habitats and external features of animals belonging to class, amphibia and reptilia.	5