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INDIAN SCHOOL SALALAH
FIRST TERM EXAMINATION – SEPTEMBER 2026



BIOLOGY (044)

Class: XI

DATE: 16/09/2026

Time: 3 Hours

Maximum Marks: 70

General Instructions:

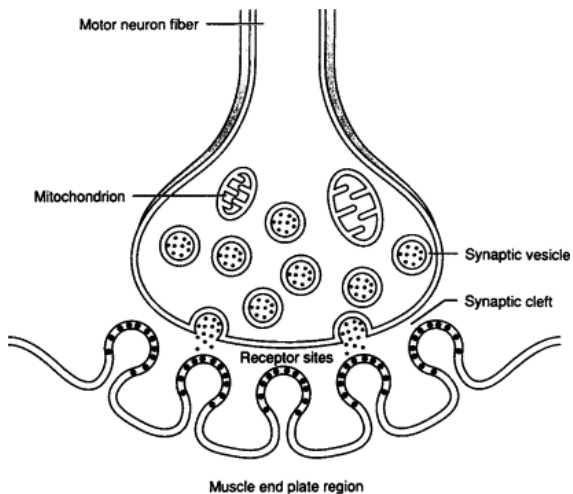
Read the following instructions very carefully and strictly follow them:

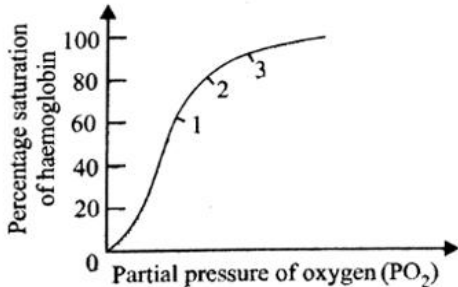
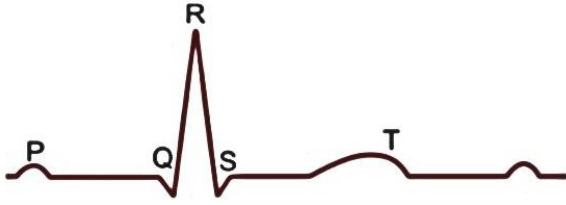
- (i) This question paper contains 33 questions. **All** questions are **compulsory**.
- (ii) This question paper is divided into **five** Sections - **A, B, C, D** and **E**.
- (iii) In **Section A** Questions no. **1 to 16** are multiple choice (MCQ) type questions, carrying 1 mark each,
- (iv) In **Section B** - Questions no. **17 to 21** very short answer (VSA) type questions, carrying 2 marks each.
- (v) In **Section C**-Questions no. **22 to 28** are short answer (SA) type questions, carrying 3 marks each.
- (vi) In **Section D** Questions no. **29 and 30** are case-based questions carrying 4 marks each. Each question has subparts with internal choice in one subpart.
- (vii) In **Section E** Questions no. **31 to 33** are long answer (LA) type questions carrying 5 marks each.
- (viii) There is no overall choice. However, an internal choice has been provided in 2 questions in Section B, 1 question in Section C, 2 questions in Section D and 3 questions in Section E. A candidate has to attempt only one of the alternatives in such questions.
- (ix) Wherever necessary, neat and properly labelled diagrams should be drawn.

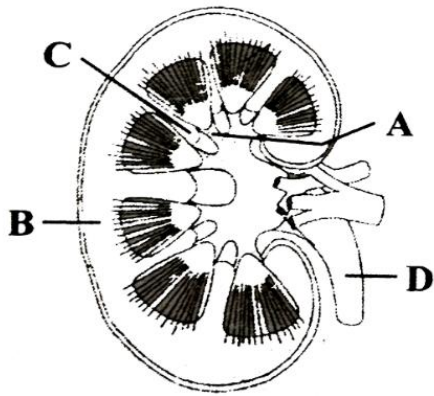
SECTION- A		
1	A young plant is exposed to conditions in which cell division, cell enlargement and differentiation are occurring simultaneously. Which combination of plant growth regulators would most appropriately account for these three aspects of growth and development? A. Cytokinin – cell division; Auxin – cell elongation; Gibberellin – stem growth B. Auxin – cell division; Cytokinin – fruit ripening; ABA – cell elongation C. Ethylene – cell division; ABA – cell elongation; Cytokinin – dormancy	1

	D. Gibberellin – stomatal closure; ABA – cell division; Ethylene – cell elongation	
2	Which of the following is not a function of Ethylene? A. It promotes senescence of leaves B. It is highly effective in fruit ripening. C. It induces flowering in mango. D. It speeds up the malting process.	1
3	Which one of the following correctly represents the major forms in which carbon dioxide is transported by human blood? A. Only dissolved CO ₂ B. Mainly as bicarbonate ions, with smaller amounts dissolved and bound to haemoglobin. C. Mainly as oxyhaemoglobin. D. Only as carbamino haemoglobin.	1
4	The volume of air remaining in the lungs even after forceful expiration, is called A. Residual volume B. Tidal volume C. Vital capacity D. Inspiratory reserve volume	1
5	A blood sample is found to contain a cellular component that lacks a nucleus at maturity and contains haemoglobin. Which physiological function is most directly associated with this component? A. Defence against pathogens B. Blood clotting C. Transport of respiratory gases D. Production of antibodies	1
6	Which of the following statements is incorrect ? A. A person of 'O' blood group has anti 'A' and anti 'B' antibodies in his blood plasma. B. A person of 'B' blood group can't donate blood to a person of 'A' blood group. C. Blood group is designated on the basis of the presence of antibodies in the blood plasma. D. A person of AB blood group is universal recipient.	1

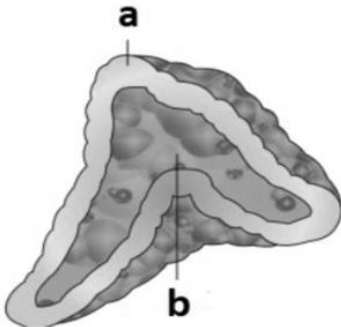
7	The vein that supplies nutrients from the intestine to the liver is A. Hepatic vein B. Inferior vena cava C. Hepatic portal vein D. Renal portal vein	1
8	A person consumes a large quantity of water within a short period. Which response would most appropriately help the body restore water balance? A. Increased secretion of ADH and increased water reabsorption B. Decreased secretion of ADH and reduced water reabsorption C. Increased secretion of aldosterone and reduced urine formation D. Increased secretion of renin and complete cessation of filtration	1
9	Which sequence correctly represents the movement of filtrate through the nephron? A. Bowman's capsule → PCT → Loop of Henle → DCT → collecting duct B. Bowman's capsule → DCT → PCT → collecting duct → Loop of Henle C. PCT → Bowman's capsule → DCT → Loop of Henle → collecting duct D. Bowman's capsule → Loop of Henle → PCT → DCT → collecting duct	1
10	A muscle fiber contracts without any change in the overall length of its thick and thin filaments. Which concept of muscle contraction best explains this observation? A. Filaments themselves undergo shortening B. Actin and myosin filaments slide past one another C. Sarcomeres disappear completely D. Myosin filaments are converted into actin filaments	1
11	If the myelin sheath surrounding an axon is damaged, which consequence would most directly affect the transmission of a nerve impulse? A. Increased synthesis of neurotransmitters B. Faster continuous conduction along the entire axon C. Impairment of rapid saltatory conduction D. Complete absence of dendrites	1
12	Which of the following correctly describes the immediate effect of insulin on blood glucose concentration? A. It increases blood glucose by stimulating glycogen breakdown	1

	B. It decreases blood glucose by promoting cellular uptake and utilisation of glucose C. It increases blood glucose by stimulating gluconeogenesis D. It prevents glucose from entering body cell	
	For Questions 13 to 16, two statements are given one labelled Assertion (A) and other labelled Reason (R). Select the correct answer to these questions from the options as 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. Both Assertion and Reason are false.	
13	Assertion (A): Absciscic acid is considered as stress hormone in plants. Reason (R): Under conditions of water stress, absciscic acid promotes stomatal closure, thereby reducing water loss.	1
14	 Study the given figure and comment upon the appropriateness of the Assertion and the Reason. Assertion (A): The axon terminals contain synaptic vesicles filled with neurotransmitters. Reason (B): When an impulse arrives at the axon terminal, it stimulates the release of neurotransmitters from vesicles in to the synaptic cleft.	1
15	Assertion (A): Respiratory rhythm center in medulla is primarily responsible for regulation of respiration. Reason (R): Rate of breathing is regulated by rhythm center because of the changes in the O₂ content of the blood.	1

16	Assertion (A): During muscle contraction, actin filaments slide over myosin filaments without shortening themselves. Reason (R): ATP hydrolysis is required for the detachment of myosin heads from actin during the cross-bridge cycle.	1
SECTION- B		
17 (I)	A) Identify the graph given below and write its significance.  B) Write a note on the respiratory disorder Asthma.	2
OR		
17 (II)	In botanical gardens and tea gardens, gardeners trim the plants regularly so that they remain bushy. Does this practice have any scientific explanation?	2
18	Given below is the diagrammatic representation of standard ECG.  A) What do the P wave and QRS complex represent? B) Write a note on Angina pectoris.	2
19 (I)	Explain the following processes: A) Polarization of the membrane of a nerve fiber B) Conduction of a nerve impulse along a nerve fiber.	2
OR		
19 (II)	Name the following: A) Hormone secreted by corpus luteum. B) A hormone acts on the gastric gland and stimulates secretion of HCl. C) A hormone responsible for normal sleep - wake cycle. D) Hormone which stimulates resorption of water by the distal tubules.	2

20	A student experiences a sudden fall in blood pressure, leading to a decrease in GFR. How does the kidney respond through the renin–angiotensin mechanism to restore blood pressure and maintain GFR? Explain the sequence of events involved.	2
21	A sample of urine was diagnosed to contain a high content of glucose and ketone bodies. Based on this observation, answer the following questions: A) Which endocrine gland and hormone is related to this condition? B) What is the condition called and how can it be rectified?	2
SECTION- C		
22	A) How are gibberellins useful in agriculture to improve productivity ? B) What is respiratory climactic? Name the hormone responsible for initiating this process.	3
23	Describe in detail how red blood cells facilitate the transport of carbon dioxide from the tissues to the lungs, including the different forms in which carbon dioxide is carried by the RBC and the role of enzymes in this process.	3
24	A) Write down the difference between stroke volume and cardiac output. B) Mention the locations of SA-node and AV- node. C) Sino- Atrial node is called the pacemaker of our heart. Why?	3
25	The given figure is of the longitudinal section of the Kidney.  A) Identify and write down the parts labelled from A to D. B) What is glomerulonephritis?	3
26 (I)	Explain sliding filament theory of muscle contraction in the formation of cross-bridges and the sliding of actin filaments over myosin during muscle contraction.	3
OR		
26 (II)	A) Name the type of joint between the following. i) Atlas and axis ii) Femur and acetabulum. B) Write two points of differences between A- band and I-band.	3

27	The neural system of all animals is composed of specialized cells called neurons. A) Draw a neatly labeled diagram of a neuron. B) What is bipolar neuron? Mention its location in human body.	3
28	Give reason for the following: A) Old people have weak immune system. B) Adrenaline is known as emergency hormone. C) Oxytocin is very important during child birth.	3
SECTION- D		
Q. No. 29 and 30 are case-based questions. Each question has 3 subparts with internal choice in one subpart.		
29	The respiratory system plays an important role in supplying oxygen to the body and removing carbon dioxide. Air passes through a series of structures before reaching the regions where gaseous exchange occurs. The movement of air into and out of the lungs is brought about by changes in the volume and pressure of the thoracic cavity. Prolonged exposure to certain environmental conditions and unhealthy habits can adversely affect the normal functioning of the respiratory system and may lead to respiratory disorders.	
A)	Write down the factors responsible for association of oxygen with haemoglobin.	2
B)	Cigarette smoking causes emphysema. Give reason.	1
<u>Attempt either subpart C or D</u>		
C)	List any two functions of conducting part of human respiratory system.	1
OR		
D)	What is partial pressure of gas?	1
30	The human skeletal system consists of bones, cartilage and joints that together provide support, protection and facilitate movement. Skeletal muscles are attached to bones and help in producing different movements. Muscles vary in their structure and functional properties, while bones also show variations in their shape and arrangement. The ribs form an important part of the thoracic cage, and the skull provides protection to the brain and supports the structures associated with the head.	
A)	Write two points of differences between Red muscle fiber and white muscle fiber.	2
B)	What are False ribs?	1
<u>Attempt either subpart C or D</u>		
C)	Write a note on the disorder Muscular dystrophy.	1
OR		
D)	What do you mean by dicondylic skull?	1
SECTION- E		
31 (I)	A) Define growth in plants and mention any two characteristics of plant growth.	5

	B) Explain the role of phytohormones in parthenocarpy and weed control. C) Name two synthetic auxins. D) Give two functions of plant growth regulator Cytokinin.	
	OR	
31(II)	A) What is Ethephon? Explain its role in the field of agriculture. B) What is meant by differentiation in plants? C) Differentiate between arithmetic growth and geometric growth in plants.	5
32(I)	A) Explain the mechanism of coagulation of blood. B) What is Erythroblastosis foetalis? C) Describe any two events that occur during Ventricular systole.	5
	OR	
32(II)	A) Differentiate between TV and IRV B) Explain the mechanism of expiration under normal conditions. C) Describe the role of diffusion membrane in exchange of gases between alveoli and blood.	5
33 (I)	A) Write a note on the role of following hormones in human body. i) Somatostatin ii) Prolactin B) Explain the role of Parathormone in maintaining blood calcium level. C) Identify the gland given below and replace the letters a and b with correct terms. 	5
	OR	
33 (II)	A) What is Sarcomere? B) Explain the structure of Myosin. C) What do you mean by neuromuscular junction?	5
