INDIAN SCHOOL AL WADI AL KABIR

Second Assessment 2022-23

SUB: Biology (044)

Date: 06 /12/2022 Time Allowed :3 hours

Class: XI **SET 1** Maximum Marks: 70

General Instructions:

i) All questions are compulsory.

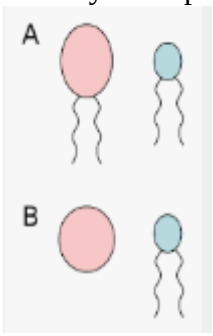
ii) The question paper has five sections and 33 questions. All questions are compulsory.

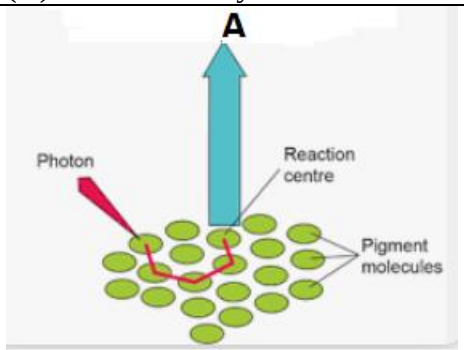
iii) Section–A has 16 questions of 1 mark each; Section–B has 5 questions of 2 marks each; Section– C has 7 questions of 3 marks each; Section– D has 2 case-based questions of 4 marks each; and Section–E has 3 questions of 5 marks each.

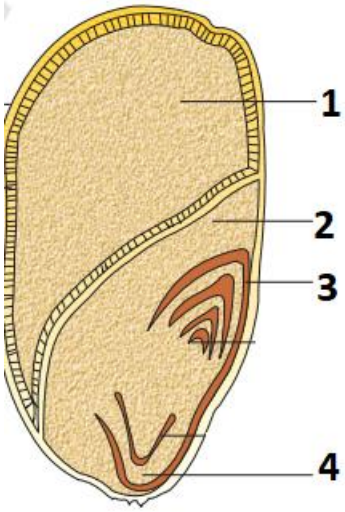
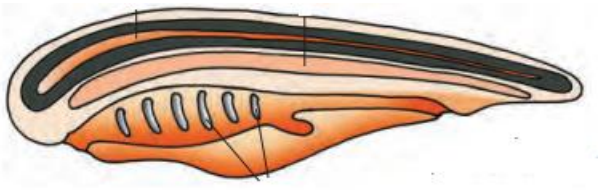
iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.

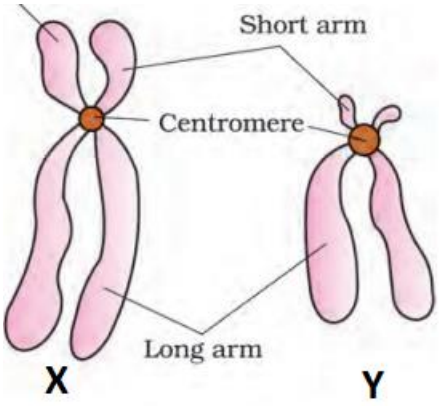
v) Wherever necessary, neat and properly labelled diagrams should be drawn.

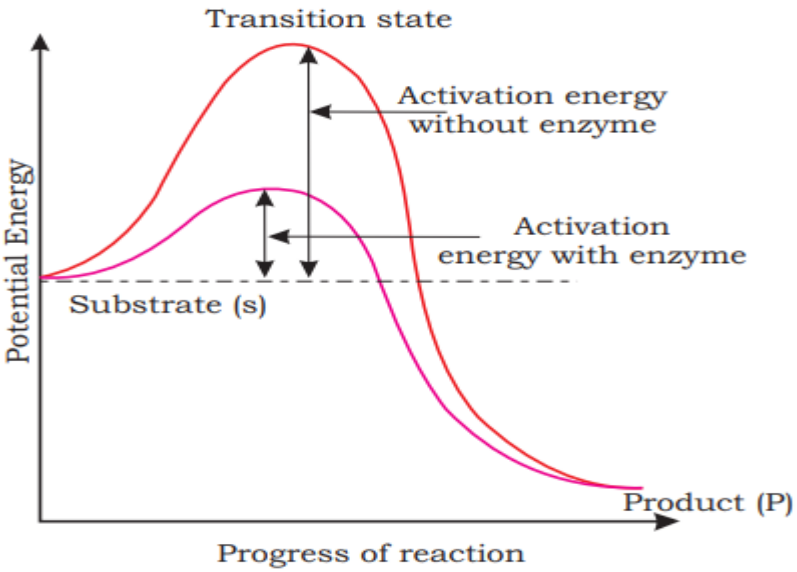
	SECTION A	
Sl. No.	**QUESTION**	**MARKS**
1	Which of the following does not come under taxon? (A) Species (B) Kingdom (C) Division (D) Key	1
2	Identify the wrong pair (A) Halophiles – salty area (B) Thermoacidophiles – hot springs (C) Methanogens – marshy areas (D) Halophiles – gut of ruminants	1

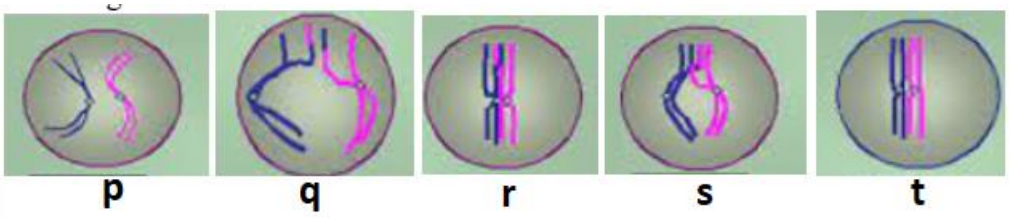
3	Identify the represented methods of gamete fusion in algae  (A) A – isogamy, B – oogamy (B) A – anisogamy, B – oogamy (C) A – anisogamy, B – isogamy (D) A – oogamy, B - anisogamy	1
4	Identify the sessile and cylindrical forms of cnidarians (A) Polyps (B) Medusae (C) Cnidoblast (D) Hypostome	1
5	Match the simple permanent tissue in column I with the special features in column II Column I — Column II (a) Parenchyma — (i) Thick corners (b) Aerenchyma — (ii) Lignin cell wall (c) Collenchyma — (iii) Hydrophytes (d) Sclerenchyma — (iv) Thin cell wall (A) a – i, b – ii, c – iii, d – iv (B) a – iv, b – iii, c – i, d – ii (C) a – iv, b – ii, c – iii, d – i (D) a – iii, b – iv, c – i, d - ii	1
6	The largest petal overlaps the lateral ones in _____ aestivation. (A) Papilionaceous (B) Valvate (C) Twisted (D) Imbricate	1
7	Which of the following is absent in female frog? (A) Webbed feet (B) Copulatory pads (C) Tympanum (D) All are present	1
8	Choose the incorrect statement. (A) Vascular system of frog is closed type. (B) Frogs have 4-chambered heart. (C) During aestivation and hibernation, skin acts as respiratory organ. (D) All the statements are correct.	1

9	Centrosome is found in- (A) Cytoplasm (B) Nucleus (C) Chromosomes (D) Nucleolus	1
10	Insulin and inulin are (A) proteins (B) Polysaccharides (C) Proteins and polysaccharides (D) Polysaccharides and proteins	1
11	Cell plate grows from (A) walls to the centre (B) centre to the walls (C) in patches (D) simultaneously	1
12	 The role of 'A' in the given system is.. (A) Absorption of sunlight (B) Electron acceptor (C) Pigment system (D) Transfer light to reaction centre	1
	Question No. 13 to 16 consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below: 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.	
13	Assertion: Proton gradient is formed between the either side of thylakoid membrane Reason: NADP takes hydrogen ions from stroma and NADPH is formed	1
14	Assertion: Compound leaves may be pinnately and palmately compound Reason: Leaf lets are arranged on either side of rachis in pinnately compound	1
15	Assertion: Bacteria are infected by bacteriophages which are RNA viruses Reason: Bacteriophages consist of genetic material and capsid	1
16	Assertion: ER, Golgi bodies, mitochondria and lysosomes are known as endomembrane system	1

	Reason: The organelles of endomembrane system perform coordinated functions	
	SECTION B	
17	Give examples for the following (i) Acoelomates (ii) Pseudocoelomates (iii) With water vascular system (iv) Coelomates	2
18	Label the parts marked as 1, 2, 3 and 4  	2
19	(a) Diagrammatically represent the secondary structure of protein (b) Distinguish between primary and secondary metabolites	2
20	Draw a neat diagram of plasma membrane and label the following parts (i) Lipid layer (ii) Integral protein	2
21	Answer the following questions based on Calvin cycle (i) Number of carbon atoms present in the primary CO_2 acceptor (ii) Identify the primary CO_2 acceptor (iii) Name the enzyme which catalyses carboxylation (iv) Number of ATP molecules used for one cycle of Calvin cycle **OR** Name the process which is known as a waste process in plants. Why it is known so?	2
	SECTION C	
22	Observe the diagram carefully  It represents the characteristic features of a phylum under animal kingdom.	3

	(a) Identify the phylum (b) Write any four features represented by the figure	
23	Write notes on the following (a) Protonema (b) Prothallus (c) Mycorrhiza	3
24	Based on the position of centromere chromosomes are divided into four types and two of them are represented as 'X' and 'Y' in the given diagrams  (a) Name 'X' and 'Y' (b) Differentiate them (c) Draw the diagrams of other two types	3
25	(a) Name the three main stages of interphase (b) Give the major events in these three stages	3
26	What is epidermal tissue system? Name any two components and give their functions **OR** With the help of a neat labelled diagram explain the structure of stomatal apparatus.	3
27	Watson and Crick in 1953 proposed the double helical model of DNA. Write any six salient features of DNA double helix	3
28	Differentiate between C_3 and C_4 pathways	3

	SECTION D	
	Q.no 29 and 30 are case based questions. Each question has subparts with internal choice in one subpart	
29	The given graph represents the action of enzymes. Carefully observe it and answer the following questions  (a) Which one has high activation energy? (b) Identify the factors affecting enzyme activity (c) Define activation energy **OR** (c) Enzyme binds to --------- of substrate	4
30	Carbon dioxide is the major limiting factor for photosynthesis. The concentration of CO_2 is very low in the atmosphere (between 0.03 and 0.04 per cent). Increase in concentration up to 0.05 per cent can cause an increase in CO_2 fixation rates; beyond this the levels can become damaging over longer periods. despite the presence of a green leaf and optimal light and CO_2 conditions, the plant may not photosynthesize if the temperature is very low. (a) Identify any four factors affecting the rate of photosynthesis (b) Select the limiting factor mentioned in the above case study	4

	(c) CO_2 is not a limiting factor for C_4 plants due to the absence of ----- **OR** (c) Define law of limiting factor	
	SECTION E	
31	(a) Write any four differences between monocot and dicot stem (b) Draw the vascular bundle of monocot stem (c) Give the diagrammatic representation of monocot stem and label ground tissue and hypodermis **OR** (a) Explain the activity of vascular cambium (b) Distinguish between heart wood and sap wood	5
32	Identify the sub stages of prophase I (p, q, r, s, and t) given and write any one special feature of each stage.  **OR** Answer the following questions based on mitosis (a) Identify the stage known as spindle stage and draw the diagram. (b) Which stage is known as reversal of prophase and why it is known so? (c) Give any two events associated with anaphase	5
33	(a) Differentiate between cyclic and non-cyclic photophosphorylation (b) Represent cyclic photophosphorylation **OR** (a) Represent non-cyclic electron transport in photosynthesis (b) Give the significance of light reaction and where does it take place?	5

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