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BENGALURU REGION

SAMPLE QUESTION PAPER - TERM – II: SESSION 2021-22

Class: XI **Max. Marks: 35**

Subject: BIOLOGY **Time:2hours**

General Instructions:

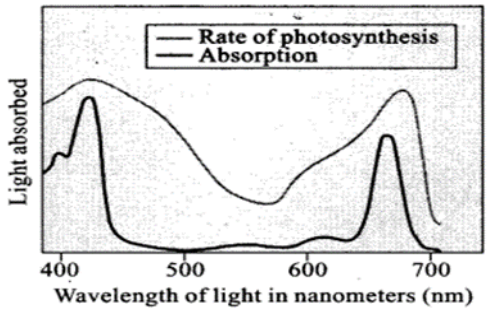
i) All questions are compulsory.

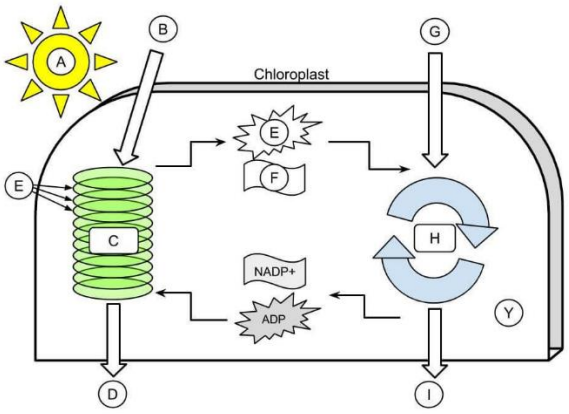
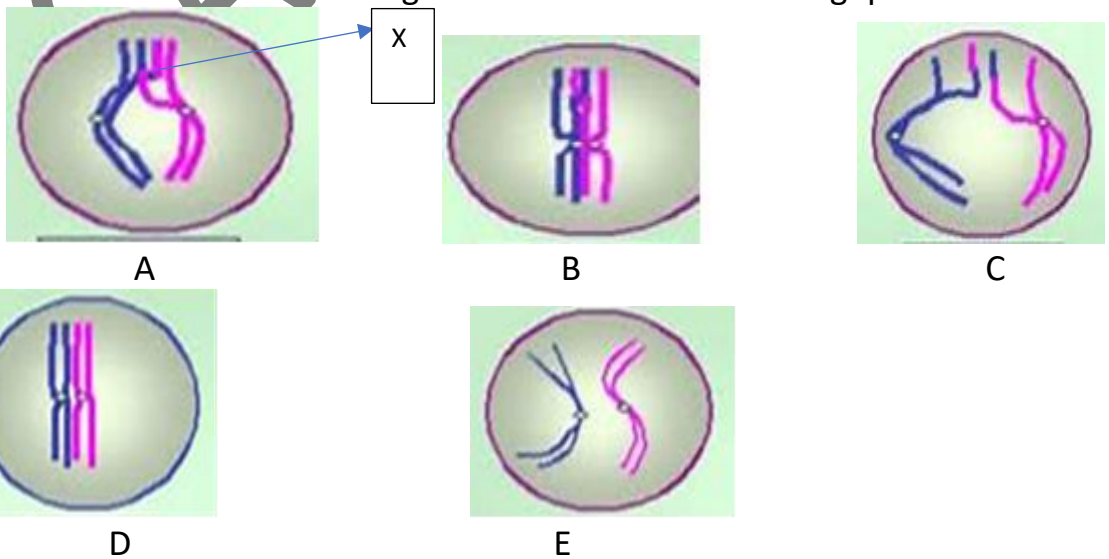
ii) The question paper has three sections and 13 questions. All questions are compulsory.

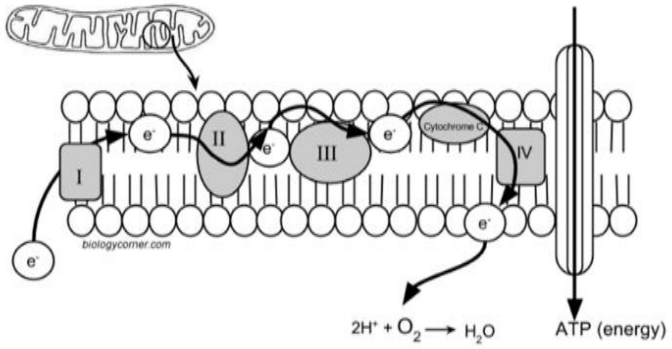
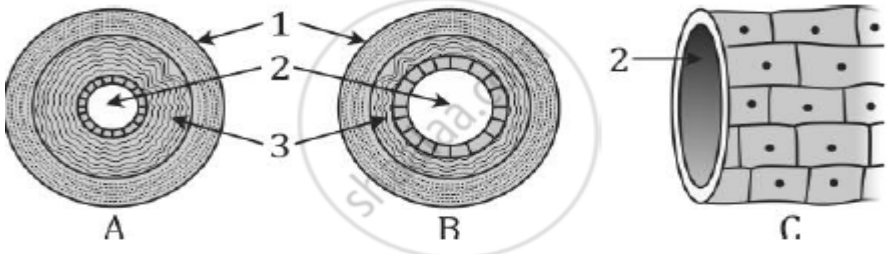
iii) Section–A has 6 questions of 2 marks each; Section–B has 6 questions of 3 marks each; and Section–C has a case-based question of 5 marks.

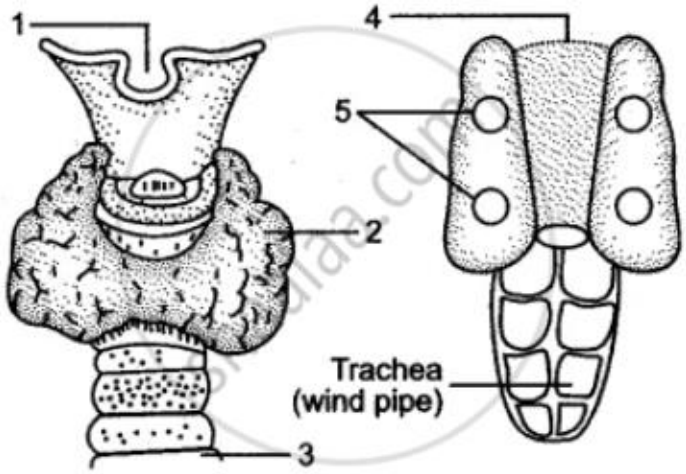
iv) There is no overall choice. However, internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.

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

Q No		Marks
	SECTION A	
1	a) Name the end products of aerobic and anaerobic glycolysis. b) List the two ways by which molecules of ATP are produced in glycolysis during aerobic respiration?	2
2	a) How many mitotic cell divisions are required to produce 512 cells from single cell? b) A diploid cell undergoes mitotic cell division. What will be the chromosome number (N) in metaphase? What would be the DNA (C) content in anaphase?	2
3	Answer the following  i. What does action spectrum indicate? How can we plot an action spectrum? ii. What is the role of accessory photosynthetic pigments?	2

	OR The diagram shows the overall view of photosynthesis. Study the diagram for two phases of photosynthesis and answer the following questions.  i) Identify C and H the phases of photosynthesis shown in the diagram. ii) What does E and F represent in the diagram?	
4	It is said that PGRs may function synergistically or antagonistically. What is meant by these two terms? Give an example for each.	2
5	Bring out the role of calcium ions and ATP in muscle contraction. **OR** State two main differences between red muscle fibres and white muscle fibres.	2
6	Fill in the blanks at A, B, C and D Polarised nerve membrane is stimulated at a site. Rapid influx of **(A)** occurs and outer side of the membrane becomes **(B)** charged. ↓ The polarity of membrane at this site is **(C)** and hence called depolarised. The potential difference between two sides is called (**D**)	2
	SECTION B	
7	The diagram below shows the various events and stages during first meiotic division. Note the cells are not arranged in the order in which the stage of meiosis I occurs. Use the diagram to answer the following questions.  	3

	(i) Place the diagrams in order from first to last of first stage of meiosis I. (ii) In cell A, what structure is labelled as 'X' (iii) Which cell depicts crossing over? What is its significance in meiosis? (iv) How are the two paired homologous chromosomes held together during zygotene? (v) During which phase terminalisation of structure X occur?	
8	Suppose Euphorbia and Maize are grown in tropical area. a. Which of them do you think will be able to survive under such conditions? b. Which one of them is more efficient in terms photosynthetic activity? c. What difference do think are there in leaf anatomy?	3
9	i) RQ is less than one when aerobic respiration takes place in fats or proteins. Give reason. ii) Coenzyme FAD removes hydrogen atoms from which molecule in Krebs cycle? iii) Identify the diagram and write the role of oxygen in this system. 	3
10	Ramu was reading from his notebook that in human beings exchange of gases takes place only on the lung surface. But his elder sister, Manisha corrected him that exchange of gases takes place in lungs as well as in the tissues. i) Represent diagrammatically the exchange of gases at the alveoli ii) Why does oxygen diffuse into the blood vessels in the lungs but out of the blood vessels in the tissues?	3
11	 i) Identify the blood vessels A, B and C ii) Name the type of blood which flows through A iii) Mention one structural difference between A and B	3

	OR Given alongside are the diagrammatic sketches of some endocrine glands. Observe the figures and answer the following questions.  i) Name the hormones secreted by structures 2 and 5. ii) What is the chemical nature of the hormones? iii) Name the element related to functioning of the hormone secreted by structure 2 and its deficiency disease.	
12	i) Why do animals excrete the nitrogenous wastes in different forms? ii) Why can not land animals excrete ammonia? iii) What is the advantage of excretion of uric acid by birds?	3
	SECTION C	
13	A 27-year-old female who is pregnant with her second child presents to her obstetrician for the first prenatal visit of this pregnancy. She delivered her first child four years ago at 39 weeks with no complications. Routine prenatal testing is ordered including ABO, Rh(D), and antibody screen. Her doctor wants her to give Rh immunoglobulin injection after seeing her blood test report to avoid risks of Rh incompatibility. i) What is Rh incompatibility? ii) What can be the problem faced by the female in the second pregnancy? Why? iii) Where is Rh factor found in the blood of humans? iv) What does Rh stand for? **OR** Read the following passage and answer the questions that follow: A sample of urine was diagnosed to contain high amount of glucose and ketone bodies. Based on this observation, answer the following questions. i) Name the endocrine gland and the hormone, related to this disorder. ii) Name the cells targeted by this hormone. iii) What term is given to this condition? iv) How can it be treated? v) Name two hyperglycaemic hormones.	5