



**ST. MARGARET SR. SEC. SCHOOL  
MID-TERM EXAMINATION 2024-25**

**SUBJECT: BIOLOGY**

**CLASS: XI**

**SAMPLE PAPER**

**Time: 3 Hr**

**M.M: 70**

**General Instructions:**

1. There are 33 questions in the question paper.
2. Attempt all the questions.
3. Draw neat and labelled pencil diagrams.

<b>SECTION-A</b>		
<b>S.NO</b>	<b>Question</b>	<b>Marks</b>
1	A bivalent of meiosis-I consists of <b>a. Two chromatids and one centromere</b> <b>b. Two chromatids and two centromere</b> <b>c. Four chromatids and two centromere</b> <b>d. Four chromatids and four centromere</b>	<b>1</b>
2	A common characteristic feature of plant sieve tube cells and most of mammalian erythrocytes is <b>a) Absence of mitochondria    b) Presence of cell wall</b> <b>c) Presence of haemoglobin    d) Absence of nucleus</b>	<b>1</b>
3	Which of the following stains is not used for staining chromosomes? (a) Basic Fuchsin    (b) Safranin (c) Methylene green    (d) Carmine	<b>1</b>
4	Cells which are not dividing are likely to be at <b>(a) G1    (b) G2</b> <b>(c) Go    (d) d. S phase</b>	<b>1</b>
5	Who proposed the fluid mosaic model of plasma membrane? <b>(a) Benda    (b) Schleiden and Schwann</b> <b>(c) Singer and Nicolson    (d) d. Robert Brown</b>	<b>1</b>
6	Which of the following is not true of a eukaryotic cell? <b>(a) Cell wall is made up of peptidoglycans</b> <b>(b) 80S type of ribosomes are present in the cytoplasm Presence of ribosome</b> <b>(c) Mitochondria contain circular DNA</b> <b>(d) Membrane bound organelles are present</b>	<b>1</b>
7	Which of the following pairs of animals has non glandular skin <b>(a) Snake and Frog    (b) Chameleon and Turtle</b> <b>(c) Frog and Pigeon    (d) Crocodile and Tiger</b>	<b>1</b>
8	Mitosis is characterised by <b>(a) Reduction division    (b) Equal division</b> <b>(c) Both reduction and equal division    (d) Paining of homologous chromosomes</b>	<b>1</b>
9	Which one of the following statements is incorrect? <b>a. In cockroaches and prawns excretion of waste material occurs through malpighian tubules.</b> <b>b. In ctenophores, locomotion is mediated by comb plates.</b> <b>c. In Fasciola, flame cells help in excretion</b> <b>d. Earthworms are hermaphrodites and yet cross fertilization take place among them.</b>	<b>1</b>

10	Body cavity is the cavity present between body wall and gut wall. In some animals the body cavity is not lined by mesoderm. Such animals are called <b>a) Acoelomates    b) Pseudocoelomates</b> <b>c) Coelomates    d) Haemocoelomates</b>	<b>1</b>
11	Fusion of two motile gametes which are dissimilar in size is termed as <b>a) Oogamy    b) Isogamy    c) Anisogamy    d) Zoogamy</b>	<b>1</b>
12	Protonema <b>a. Haploid and is found in mosses</b> <b>b. Diploid and is found in liverworts</b> <b>c. Diploid and is found in pteridophytes</b> <b>d. Haploid and is found in pteridophytes</b>	<b>1</b>
	<b>Question No. 13 to 16 consist of two statements- Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:</b> <b>A. Both A &amp; R are true and R is the correct explanation of A.</b> <b>B. Both A &amp; R are true and R is not the correct explanation of A.</b> <b>C. A is true but R is false</b> <b>D. A is false but R is true.</b>	
13	<b>Assertion :</b> Assertion : Bacteria are prokaryotic. <b>Reason :</b> Reason : Bacteria do not possess true nucleus and membrane bound cell organelles.	<b>1</b>
14	<b>Assertion:</b> Euglena is called as plant animal. <b>Reason :</b> Pellicle of Euglena is made up of cellulose and not protein.	<b>1</b>
15	<b>Assertion :</b> TMV is a virus which causes mosaic disease. <b>Reason :</b> TMV has RNA as genetic material.	<b>1</b>
16	<b>Assertion:</b> Chlorella and Spirulina are used as a food supplement by space travellers. <b>Reason:</b> These are rich in proteins	<b>1</b>
	<b>SECTION- B</b>	
17	Linnaeus is considered as Father of Taxonomy. Name two other botanists known for their contribution to the field of plant taxonomy?	<b>2</b>
18	The heterosporous pteridophytes show certain characteristics, which are precursor to the seed habit in gymnosperms. Explain.	<b>2</b>
19	An anther has 1200 pollen grains. How many pollen mother cells (pmc) must have been there to produce them?	<b>2</b>
20	What is the importance of pneumatic bones and air sacs in Aves?	<b>2</b>
21	Comment on the cartwheel structure of centriole. What are plasmids? Describe their role in bacteria?	<b>2</b>
	<b>SECTION-C</b>	
22	In which phase of meiosis are the following formed? Choose the answers from hint points given below. a. Synaptonemal complex _____ b. Recombination nodules _____ c. Appearance/activation of enzyme recombinase _____ d. Termination of chiasmata _____ e. Interkinesis _____	<b>3</b>

	f. Formation of dyad of cells _____													
23	Neurospora - an ascomycetes fungus has been used as a biological tool to understand the mechanism of plant genetics much in the same way as Drosophila has been used to study animal genetics. What makes Neurospora so important as a genetic tool?	3												
24	Apart from chlorophyll, algae have several other pigments in their chloroplast. What pigments are found in blue-green, red and brown algae that are responsible for their characteristic colours?	3												
25	Draw labelled diagrams of a. Female and male thallus of a liverwort. b. Gametophyte and sporophyte of Funaria	3												
26	Match the following <table border="1" style="margin-left: 20px;"> <tr> <td>a) Amphibia</td> <td>i) Air bladder</td> </tr> <tr> <td>b) Mammals</td> <td>ii) Cartilaginous notochord</td> </tr> <tr> <td>c) Chondrichthyes</td> <td>iii) Chondrichthyes</td> </tr> <tr> <td>d) Ostichthyes</td> <td>iv) Pneumatic bones</td> </tr> <tr> <td>d) Cyclostomata</td> <td>v) Dual habitat</td> </tr> <tr> <td>e) Aves</td> <td>vi) Sucking and circular mouth without jaws.</td> </tr> </table>	a) Amphibia	i) Air bladder	b) Mammals	ii) Cartilaginous notochord	c) Chondrichthyes	iii) Chondrichthyes	d) Ostichthyes	iv) Pneumatic bones	d) Cyclostomata	v) Dual habitat	e) Aves	vi) Sucking and circular mouth without jaws.	3
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27	Differentiate between: a. Aceolomate and pseudocoelomate b. Notochord and nerve cord c. Polyp and medusa	3												
28	Write the functions of the following: a. Golgi Apparatus b. Centrioles c. Mitochondria	3												
<b>SECTION-D</b>														
<b>Question No. 29 &amp; 30 are case based questions.</b>														
29	The detailed structure of the membrane was studied only after the advent of the electron microscope in the 1950s. Meanwhile, chemical studies on the cell membrane, especially in human red blood cells (RBCs), enabled the scientists to deduce the possible structure of the plasma membrane. These studies showed that the cell membrane is composed of lipids, proteins and carbohydrates. <b>Answer the following questions.</b> (i) Which component of the plasma membrane is arranged as a bilayer? (ii) What does the lipid component of the membrane mainly consists of ? (iii) How does membrane help in transportation of materials across it? (iv) Why is membrane said to be selectively permeable?	4												
30	Plastids are found in all plant cells and in euglenoids. These are easily observed under the microscope as they are large. They bear some specific pigments, thus imparting specific colours to the plants. Plastids consist of numerous membrane layers embedded in a material called the stroma. They have their own genome and ribosomes. <b>Answer the following questions.</b> (i) Name different kinds of plastids. (ii) Which plastids store carbohydrate in potatoes? (iii) What is meant by stroma?	4												

	(iv) Why are plastids known as semi-autonomous organelles	
	<b>SECTION-E</b>	
31	<p>Comment upon the habitats and external features of animals belonging to class, amphibia and reptilia.</p> <p style="text-align: center;"><b>OR</b></p> <p>Mammals are most adapted among the vertebrates. Elaborate.</p>	<b>5</b>
32	<p>Write brief note on the following (i) Synaptonemal complex with diagrams. (ii) Metaphase plate</p> <p style="text-align: center;"><b>OR</b></p> <p>Describe Prophase-1 of meiosis with the help of diagrams.</p>	<b>5</b>
33	<p>Explain characteristics of phylum Aschelminthes.</p> <p style="text-align: center;"><b>Or</b></p> <p>Draw a flow chart depicting the classification of animal kingdom.</p>	<b>5</b>