INDIAN SCHOOL SOHAR **No of printed pages- 7**

TERM- I EXAMINATION (2023 - 24)

CLASS : XI **SUBJECT- BIOLOGY** **MAX MARKS : 70**

DATE : 19/09/2023 **TIME: 3 HOURS**

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 labeled diagrams should be drawn.

SECTION- A

1. Virus was first obtained in crystallized form by 1

(a) Beijernik
(b) Stanley
(c) Ivanowsky
(d) Leeuvenhoek

2. Given below are some organisms and their features. Select the correct match. 1

Organism	Body feature
A. *Pila*	i Flame cells
B. *Bombyx*	ii Comb plates
C. Pleurobrachia	iii Radula
D. Taenia	iv Malphigian tubules

(a) A-i, B-ii, C-iv, D-iii

(b) A-iii, B-ii, C-I, D-iv

(c) A-iii, B-iv, C-ii, D-i

(d) A-ii, B-iii, C-iv, D-i

3. Which group of animals belong to the same phylum? 1

(a) Prawn, Scorpion, Locusta, Aedes
(b) Sponge, Sea anemone, Starfish, Nereis
(c) Ctenoplana, Taenia, Adamsia, Aurelia
(d) Round worm, Hook worm, Filaria worm, Tape worm

4. Members of Phaeophyceae usually have a rigid cell wall made up of 1

(a) Cellulose and algin
(b) Peptose and peptidoglycan
(c) Cellulose and pectose
(d) Chitin and pectose

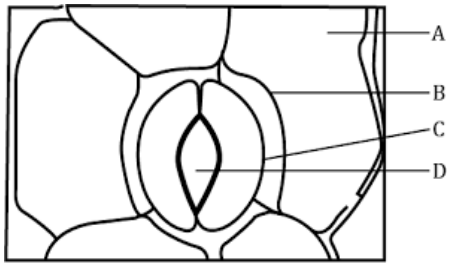
5. Which of the following features is associated with leaves of monocots? 1

(a) presence of reticulate venation
(b) absence of bulliform cells
(c) mesophyll is well differentiated
(d) uniform distribution of stomata on both the surfaces of epidermis

6. Protonema stage occurs in the life cycle of 1

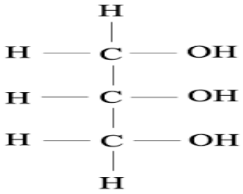
(a) Marchantia
(b) Funaria
(c) Equisetum
(d) Laminaria

7. Given below is the diagram of stomatal apparatus. Which option gives correct identification of parts A, B, C and D? 1



	A	B	C	D
(a)	Subsidiary Cell	Epidermal Cell	Guard Cell	Stomatal aperture
(b)	Epidermal Cell	Subsidiary Cell	Guard Cell	Stomatal aperture
(c)	Epidermal Cell	Subsidiary Cell	Stomatal pore	Guard Cell
(d)	Subsidiary Cell	Epidermal Cell	Guard Cell	Stomatal aperture

8. Identify the organic compound from the given structural formula: 1



(a) Ribose
(b) Pyruvate
(c) Tri glyceride
(d) Glycerol

9. Prokaryotic cells have a chemically complex cell envelop. The cell envelop of bacteria is composed of : 1

(a) outermost cell wall followed by glycocalyx and plasma membrane
(b) outer plasma membrane, cell wall and capsule
(c) outermost glycocalyx followed by cell wall and plasma membrane
(d) outermost slimy layer, tough capsule and plasma membrane

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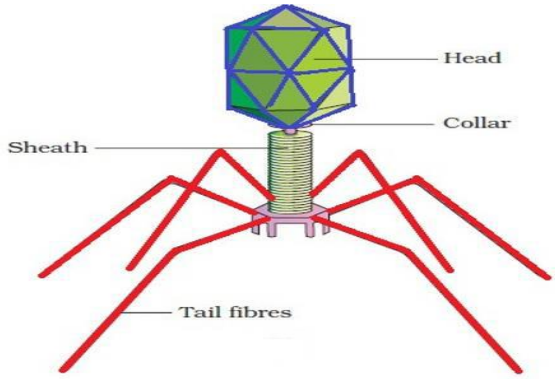
10. Which of the following statements about inclusion bodies is incorrect? 1

a) They are devoid of any membranous covering.
b) They are involved in food ingestion and digestion.
c) They lie free in the cytoplasm.
d) They represent the reserve food material in the cytoplasm.

11. Select the correct option which explains mode of action about the given figure 1



(a) TMV, attacks plants

(b) Bacteriophage, attacks bacteria

(c) Mycoplasma, attacks virus

(d) Viroid, attacks bacteria

12. ICBN stands for 1

(a) Indian Council of Biological Name

(b) International Code for Botanical Nomenclature

(c) International Council of Biological Name

(d) Indian Code of Botanical Nomenclature

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 but 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 : Biological names are generally in latin and written in italics. 1
Reason : They are derived from latin irrespective of their origin.

14- Assertion: Polluted bodies have have high abundance of blue green algae. 1
Reason : Blue green algae plays significant role in nitrogen fixation.

15 - Assertion : Mitochondria and Chloroplast are semi -autonomous organelles . 1
Reason : Both are devoid of DNA and ribosomes.

16- Assertion : Mitosis results in production of diploid daughter cells . 1
Reason : Mitosis is referred to as an equational division .

SECTION – B

17- Give two reasons why fungi have been removed from plant kingdom and placed in a separate kingdom. 2

18- Every chromosome has a primary constriction called centromere. How are chromosomes classified on the basis of centromere? 2

19 – Give the significance of the following features to their respective phylum. 2

A- Ostia in Porifera
B- Mantle cavity in Mollusca
C- Cnidoblasts in Cnidaria
D- Proboscis in Hemichordata

20- A group of plants is considered as first terrestrial plants to develop vascular tissues. 2
Identify this plant group and comment on its morphological features.(any two)

21- A cell having 16 chromosomes (2n) undergoes cell cycle. What will be the number of chromosome after the S- phase? Give reason for the same. 2

OR

How does cytokinesis occur in animal cells? Why cytokinesis cannot occur in the same way in plants?

SECTION – C

22 – Complete the given table by filling in the blanks from A to F. 3

Class	**Major Pigment**	**Reserve Food**
Chlorophyceae	A)----------	B)----------
C)----------	Chlorophyll a, d	D)----------
E)----------	F)----------	Laminarin

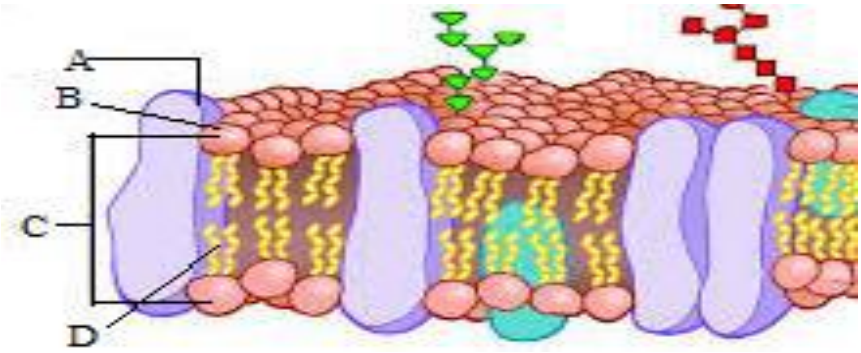
23 - A student prepared a transverse section of a plant stem taken from the surroundings. 3
How would he confirm that it is a dicot stem and not a monocot stem ?(three points)

OR

Describe the internal structure of a dorsiventral leaf with a labeled diagram.
(4)

24 - Fungi constitute a unique kingdom of heterotrophic organisms, which reproduce by asexual and sexual means. What are the three steps involved in the sexual cycle of fungi? 3

25 – Study the figure given below and answer the following questions : 3



(a) Label the parts marked A, B, C and D.
(b) How does the quasi- fluid nature of the membrane serve the cell?

26- Lichens are symbiotic association between two different groups of organisms. 3
(a) Explain the components of lichens and state their significance.
(b) How lichens can be considered as ecologically beneficial?

27- Frogs exhibit sexual dimorphism and are beneficial for mankind. 3
(a) How can a male frog be distinguished from a female frog?
(b) List any two ways in which frogs are significant for mankind.

28- How are flowers classified based on the position of calyx, corolla and androecium with respect to the ovary on the thalamus? Explain with neat diagrams. 3

SECTION - D

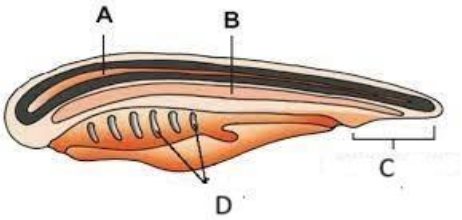
Q 29 and 30 are case based questions. Each question has 3 subparts with internal choice in one subpart.

29- Read the following and answer the questions that follow : 4

Animals belonging to phylum Chordata are fundamentally characterized by presence of nerve chord. These are bilaterally symmetrical, triploblastic, and coelomate with organ-system level of organisation. Phylum Chordata is divided into different subphyla.

The members of subphylum Vertebrata possess notochord during the embryonic period. The notochord is replaced by a cartilaginous or bony vertebral column in the adult. Thus all vertebrates are chordates but all chordates are not vertebrates. Besides the basic chordate characters, vertebrates have a ventral muscular heart with two, three or four chambers, kidneys for excretion and osmoregulation and paired appendages which may be fins or limbs.

a) All vertebrates are chordates, but all chordates are not vertebrates. Justify.
b) Name the different sub phyla of phylum chordata.
c) Study the given figure and list the specific features A, B, C and D.



OR

c) How do chordates differ from non-chordates with respect to Central Nervous System and Heart.

30- Read the following and answer the questions that follow : 4

A biology teacher while teaching in the class explained the significance of various nutrients of balanced diet such as carbohydrates, proteins, fats, vitamins and minerals. One student got curious to know about the harmful impact of fats in diet and he narrated the miserable health condition of his neighbour who suffered from obesity , hypertension and heart problems. Teacher then clarified that excessive consumption of saturated fats has detrimental effect on health and also over heating of proteins leads to denaturing of proteins. Teacher further elaborated that everything should be consumed in moderation as per age, occupation and life style. One should seek proper medical assistance, in case of any health issues.

a) What are the fats composed of?
b) Why do proteins get denatured at high temperature?
c) How can fats be classified on the basis of saturation of carbon bonds?
Which of these fats are harmful? Give reason.

OR

Mention various functions of proteins in human life. (any four).

SECTION – E

31- The reactions given below show the types of reactions catalyzed by different group of enzymes. 5
Identify the classes of enzymes and explain the reactions catalyzed by them:

(a) $S\text{-}G + S' \rightarrow S + S'\text{-}G$

(b) S reduced + S' oxidized $\rightarrow$ S oxidized + S' reduced.

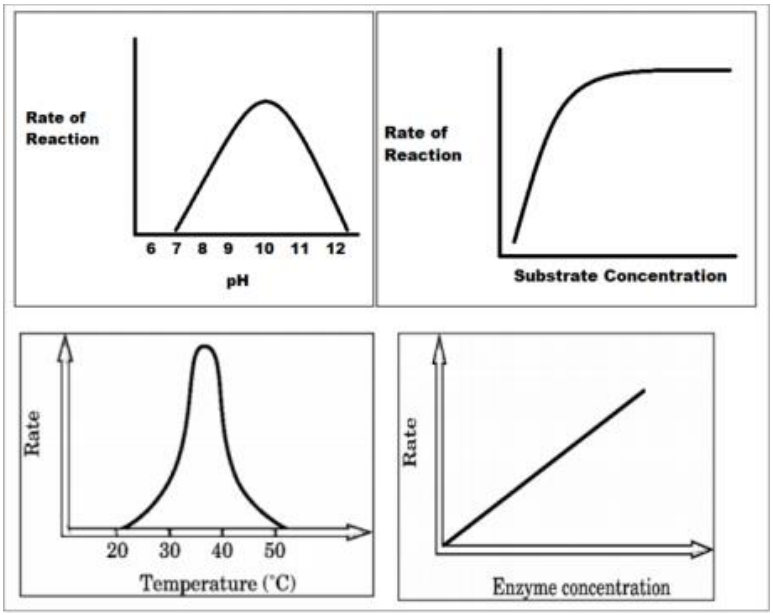
(c) $C - C \rightarrow X\text{-}Y + C = C$

(d) $A + B \rightarrow A - B$

(e) $A - B + H_2O \rightarrow A - H + B - OH$

OR

The graphs given below show the activity of enzyme under various factors.
Write any five observations which can be interpreted from these graphs



32- a) Define the term aestivation. 5

b) Explain the type of aestivation found in Calotropis, China rose, Cassia and Pea. Illustrate with the help of neat diagrams.

OR

a) How a maize seed differs from a bean seed with respect to the endosperm and cotyledon?
b) Draw a neat diagram of a monocotyledonous seed and label its embryonal axis, cotyledon and protein layer.

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33- Cell division is a progressive process. Explain the key events of the different stages of mitosis. 5
Which stage is best suited for observing chromosome morphology? Give reason for the same.

OR

Prophase of the first meiotic division is longer and complex as compared to prophase of mitosis. Explain various stages of Prophase I of meiosis.

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