

TIME - 3 hr.

M.M 70

## General Instructions-

- 1) Paper consists of four sections. Section A, Section B, Section C & Section D.
- 2) All question are compulsory. Do all question in serial order.
- 3) Write very precise and to the point answers keeping in mind the marks allotted for each.

## SECTION A

This section consists of 5 questions carrying 1 mark each. Answer them in one line or in one word.

- Q1 Name one algae which is taken as food supplement by space travelers and why?
- Q2 What do you understand by the term Diploblastic animal? Give one example of it.
- Q3 List one important use of Phosphorus and Calcium in the plants?
- Q4 Roots of some Gymnosperms undergo symbiotic relationship with Fungi, why do they have this kind of association?
- Q5 What kind of placentation is seen in Ladyfinger and tomato?

## SECTION B

Question numbers 6 to 10 are carrying 2 marks each. Answer them in 20 to 30 words.

- Q6 Study the following Floral formula  $\oplus \overset{\uparrow}{\ominus} K(5) \overline{C(5)} A \underline{G(2)}$  and explain the description about the flower having this formula. Give any two examples of the plants belonging to this family.

Q7 Why are blue green algae included under kingdom Monera not under kingdom Plantae ? Discuss the importance of cyanobacteria.

Q8 In which group are the following found : Conidia, zygospore, ascospore and sporangiophore?

Q9 Differentiate between interphase and interkinesis. What is the significance of interphase.

Q10 Draw labeled diagram of organelle where photosynthesis takes place in the plants.

Or

The organelle where respiration takes place in the plants.

### SECTION C

Question numbers 11 to 22 are of 3 marks each. Answer them in 40 to 60 words.

Q11 Name the phylum where you will find the following-

- a) Choanocytes b) comb plates c) radial symmetry d) Malpighian tubules
- e) joint legs f) cartilaginous skeleton.

Q12 Write one important function of the following-

- a) Leucoplast b) Lysosome c) Ribosome d) Chromatin e) Centriole f) SER

Q13 Differentiate between  $n$ ,  $2n$  and  $n + n$  condition. Give the technical names of these conditions.

Q14. Write two characteristics of each Phylum a) Porifera b) Annelid c) chordata

Q15 Identify Draw labeled diagram for the following stages of cell division and write the identifying features also .

- a) When the chromosomes are highly condensed and shortest
- b) Homologous chromosomes pair up

Q16 What is the role of enzymes in a biochemical reactions? Plot a graph to explain its role.

Q17 Differentiate between Anaphase 1 and Metaphase 1 of meiosis with labeled diagrams.

Q18 What do you understand by the term crossing over? When does it take place during cell division. Draw labeled diagram to show the process and write its significance.

Q19 Draw labeled diagram of submetacentric chromosome having SAT on it. A plant cell has 24 chromosomes in its cell. It undergoes mitotic cell division and meiotic cell division to form daughter cells. What would be the chromosome number chromosomes after each type of cell division and total no of daughter cells formed respectively.

Q20 What are the three factors which influence the activity of enzymes in the living system.

Q21 i) Draw chemical structure of -

- a) Glucose (ringed structure)    b) deoxyribose sugar    c) serine

ii) Draw complementary strand for DNA and RNA separately on the following template -

3' ... ATGCCGATATTGGCCATTGCATAA ... 5'

Q22 Define coelom. Explain different types of coelom found in the animals.

Q23 a) Why Bryophytes are called as amphibians of plant kingdom? *Briefly write down the*

b) Where will you look for the following structures in Plant Kingdom-

- i) prothallus    ii) protonema.

c) Give two examples of economically important Bryophytes. (1+2+1=4)

#### Section D

Question No 24 to 26 carry 5 marks each. Answer them in 80 to 100 words.

Q24 a) Draw labeled diagram of Plant cell or animal cell.

b) How does cytokinesis takes place in animal cell?

Q25 Draw chemical structure to show the following bond formations—

a) Peptide bond

b) Glycosidic bond

c) Phosphodiester bond    (3+2)

Q26 Draw schematic diagram to show the life cycle of Angiospermic plant.