

TIME: 3 hrs

M.M 70

GENERAL INSTRUCTIONS :

1. The question paper comprises of five Sections A, B, C, D and E.
2. All questions are compulsory.
3. There is no overall choice however; internal choice has been provided. Only one option in such question is to be attempted.
4. Questions 1 to 5 in section A are very short questions of one mark each. These are to be answered in one word or one sentence each.
5. Questions 6 to 10 in section B are short questions of two marks each. These are to be answered in approximately 20-30 words each.
6. Questions 11 to 22 in section C are questions of three marks each. These are to be answered in approximately 30-50 words each.
7. Question 23 in section D questions is of four mark.
8. Question 24- 26 in section E is of 5 marks each.
9. Wherever necessary, the diagrams should be neat and properly labelled.

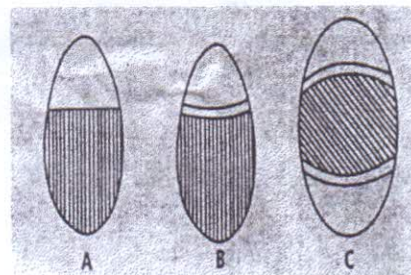
SECTION A (5X 1 =5)

- 3 1/2
- 1) The transverse section of a plant material shows the following anatomical features 1) vascular bundles are conjoint, scattered and surrounded by bundle sheath 2) phloem parenchyma is absent. What will you identify as?
 - 2) What is radula? Which organism possesses this?
 - 3) Name the enzyme that increases the rate of reaction for the formation of H_2CO_3 in the human body.
 - 4) What is the quiescent stage in the cell cycle?
 - 5) Identify the types of chromosomes given below:



SECTION B (5X2= 10)

- 2
- 6) How is virus different from viroid?
 - 7) Give one scientific word for the following sentences:
 - a) Ribo nucléoprotein complex formed between two synapsed homologous chromosome.
 - b) The radial arrangement of microtubules around a centriole pair at the beginning of Prophase.
 - c) The time interval between two successive divisions.
 - d) Stage where centromere split and chromatids separates.
 - 8) Refer to the given figure and answer the following questions:
 - a) Which of the figure shows the conjoint, bicollateral vascular bundles?
 - b) Which of the given bundles will show secondary growth?
 - c) In which family bicollateral vascular bundles are most commonly found?
 - d) Draw labelled diagram of vascular bundle found in maize.



- 8) Both endoplasmic reticulum and golgi apparatus are endomembrane structures, yet they differ in their terms of their functions. Comment.

10) Differentiate between the following giving two differences each:

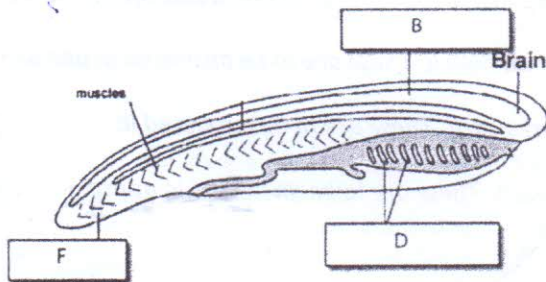
- a) Phycomycetes and Ascomycetes
 b) Chondrichthyes and Osteichthyes

or

Diffusion of gases occur in alveolar region only and not in the other part of respiratory system and why?

SECTION C (12 X3= 36)

11) The figure given below shows some basic chordate characteristics



- 1) Name the parts labelled as B, D and F.
 2) Write 3 features of chordates other than those mentioned in the figure.

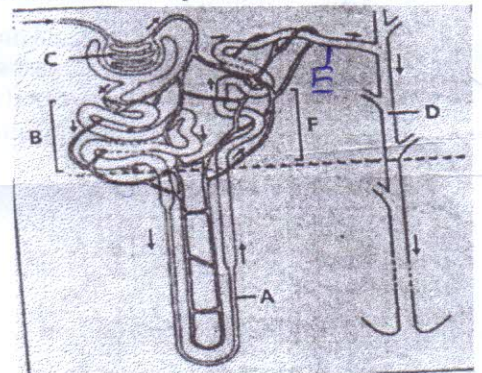
2/2

12) Who proposed Fluid Mosaic Model of plasma membrane? Draw its structure and write any two functions of it?

13) Explain with the help of diagrams the different categories of animal based on the presence or absence of coelom. Also give example of organisms.

14) Refer the given figure of nephron to answer the following questions. Write the alphabet and the part indicated.

- a) Which part of nephron makes the filtrate isotonic to blood plasma?
 b) Which part of nephron makes the filtrate hypotonic to blood plasma?
 c) In which part of nephron does the ultrafiltration occurs?
 d) What is the function of the part E?
 e) In which part of nephron does the water is reabsorbed under the influence of ADH? And How?



15) Illustrate the taxonomical hierarchy with suitable example of a plant and an animal. Define Genus.

Or

Identify the organism shown. What is its significance in nature? Label 1-2.



1

2

16) Describe the following:

- a) Synapsis b) Bivalent c) chiasmata. Draw diagram to illustrate your answer

Or

16 a) Why underground swollen part of potato is a stem and hanging brown fibrous part of banyan tree are roots. Justify your answer

b) Which part of the plant is modified to form?

- 1 pneumatophores in Rhizophora
 2 runner in grasses
 3 Cladode in ruscus

4 stilt roots in sugarcane

a)



b)



b)

17) Given above is the floral diagram of two flowers

a) Write their family and floral formulae.

b) Give an example of a medicinal and ornamental plant belonging to this family.

18) The boundaries of Protista are not well defined. Discuss with the help of any three members of this Kingdom.

19) Draw ultrastructure of mitochondria and give its major function.

20) Draw a labelled diagram to show the impulse conducting system in human heart.

Or

Enumerate the chemical events that occur in the process of blood clotting.

21) During Expiration, how is the pressure gradient formed between the lungs and the atmosphere?

22) Draw a labelled diagram of head region of cockroach.

Or

What is meant by placentation? What type of placentation is present in the gynoecium of the following plants? Illustrate with the help of diagram also.

a) China rose

b) Dianthus

c) Argemone

SECTION - D (1X4=4)

23) People working in certain industries, especially those involved in grinding or breaking stones and manufacturing cement, etc. suffer from some peculiar /specific respiratory diseases, though they are provided masks and nasal filters.

a) What are such diseases that develop due to pollutants in the work places of individuals, called?

b) Name two such diseases.

c) What are the common symptoms shown by such workers?

d) What value is shown by the industrialists in providing protective masks to workers?

SECTION - E (3X5=15)

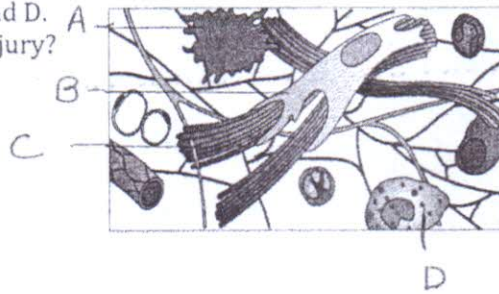
24) a) Describe the digestive role of chymotrypsin. Which two other digestive enzymes of the same category are secreted by its source gland? (2)

b) Given below is the diagrammatic sketch of a certain type of connective tissue. (3)

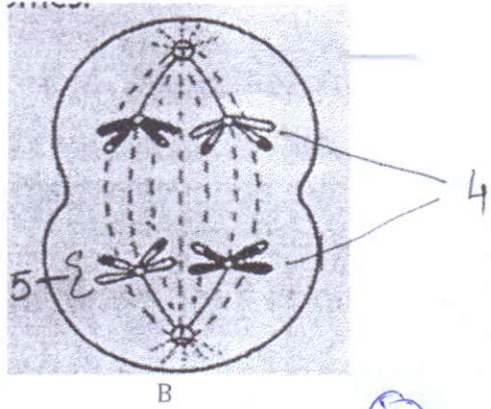
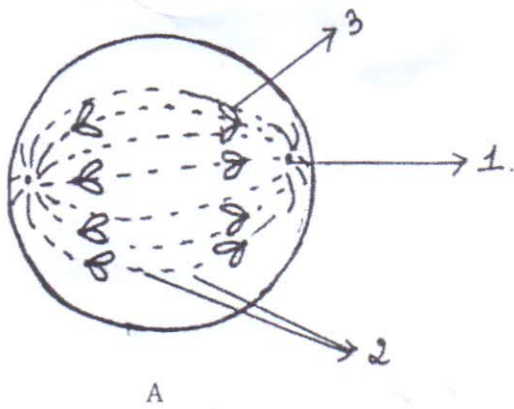
1) Label the parts marked A, B, C and D.

2) What is produced by D during injury?

3) What is the function of C?



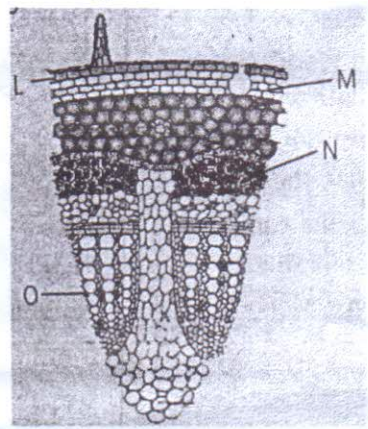
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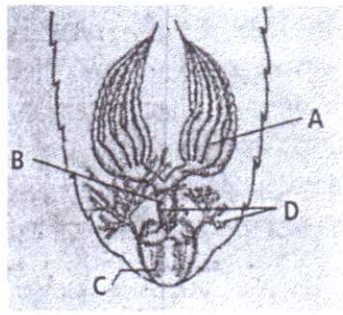
- (i) Identify the stages A and B. Give a reason to support your answer.
- (ii) Name the parts labelled 5.
- (iii) What is the chromosome number of the cells?
- (iv) Draw a neat, labelled diagram of the cell as it would appear in the next stage. Name the stage.
- (v) List the differences between the cells in these two stages.

Or



- a) Identify the structure shown above. Give two reasons for its identification.
- b) Label L, M, N and O.
- c) Give function of part labelled N, Medullary rays.

26) Study the diagram and answer the questions that follows:



2

- 1) Label the parts marked A, B, C, and D.
- 2) What does the figure represent?
- 3) Which labelled part is formed of a group of eight ovarian tubules or ovarioles, containing a chain of developing ova?
- 4) The labelled part B is present in which abdominal segment?

Or

Explain the process of secondary growth in the stems of woody angiosperms with the help of schematic diagrams. What is its significance? (5)