

NAME OF STUDENT:

MAX.MARKS: 80

DATE:

TIME : 2 HOURS

NOTE : You will not be allowed to write during the first 15 minutes. This time is to be spent in reading the question paper. The time given at the head of this paper is the time allowed for writing the answers. Section A is compulsory. Attempt any four questions from Section B.

Section A

(Attempt all questions from this section)

Question 1

Select the correct answers to the questions from the given options.

[15]

(Do not copy the question, write the correct answers only)

(i) The part of a cell containing hereditary material.

- | | |
|-----------------|--------------|
| a) Cytoplasm | b) Nucleolus |
| c) Mitochondria | d) Nucleus |

(ii) The tissue responsible for transport of water in plants.

- | | |
|-----------|----------------|
| a) Phloem | b) Parenchyma |
| c) Xylem | d) Collenchyma |

(iii) Which of these bacteria live in root nodules of leguminous plants?

- | | |
|-----------------------------|---------------------------------|
| a) <i>Lactobacillus</i> | b) <i>Rhizobium</i> |
| c) <i>Acetobacter aceti</i> | d) <i>Clostridium butylicum</i> |

(iv) **Assertion (A):** A flower is considered the reproductive part of the plant.

Reason (R): Complete flowers are always unisexual.

- | | |
|--------------------------|---------------------------|
| a) A is true R is false | b) A is false R is true |
| c) Both A and R are true | d) Both A and R are false |

(v) Organism having jointed legs and an exoskeleton.

- | | |
|--------------|------------|
| a) Earthworm | b) Octopus |
| c) Prawn | d) Snake |

(vi) **Assertion (A):** Glucose is completely broken down in aerobic respiration.

Reason (R): It produces carbon-dioxide, water and energy.

- | | |
|--------------------------|---------------------------|
| a) A is true R is false | b) R is true A is false |
| c) Both A and R are true | d) Both A and R are false |

(vii) Which component of blood is responsible for clotting?

- | | |
|--------------------|----------------------|
| a) Red blood cells | b) Plasma |
| c) Platelets | d) White blood cells |

(viii) Sunil tried to match the flower parts with their functions. He tabulated the pairs as follows:

P	Stigma	-	Receptive tip of pollen
Q	Ovary	-	Becomes seed after fertilisation
R	Anther	-	Produces pollen grains
S	Ovule	-	Becomes fruit after fertilisation

Identify the correct pair:

- a) Q and R
b) P and R
c) Q and S
d) S and R

(ix) The outer protective covering of the seed is called:

- a) Endosperm
b) Cotyledons
c) Testa
d) Plumule

(x) Which of the following is an essential part of a flower?

- a) Calyx
b) Corolla
c) Androecium
d) Bract

(xi) A biology teacher asked her students to give two examples of segmented worms:

- Raj said: Liver fluke and Spider
Sonu said: Leech and Earthworm
Lata said: Nereis and Earthworm
Ajay said: Earthworm and Liver fluke

Who were correct

- a) Ajay and Sonu
b) Sonu and Lata
c) Raj and Lata
d) Ajay and Raj

(xii) Which of the following seeds shows hypogeal germination?

- a) Tamarind
b) Cotton
c) Bean
d) Gram

(xiii) **Assertion (A):** The cell membrane allows the movement of all substances in and out of the cell.

Reason (R): It is selectively permeable in nature.

- a) A is true R is false
b) A is false R is true
c) Both A and R are true
d) Both A and R are false

(xiv) During a practical exam, a specimen of frog was placed. Students were told to observe and name the class. Which of the following is the correct answer?



Frog

a) Reptilia

b) Pisces

c) Amphibia

d) Mammalia

(xv) **Assertion(A):** Fungi are autotrophic organisms.

Reason(R): Fungi prepare food using chlorophyll.

a) A is true R is false

b) A is false R is true

c) Both A and R are true

d) Both A and R are false

Question 2

(i) Name the following:

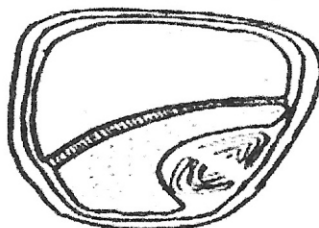
[5]

- (a) Kingdom that includes bacteria.
- (b) The arrangement of flowers on a branch or the floral axis.
- (c) Group of cells performing specific functions.
- (d) The breathing roots in plants growing in swamps.
- (e) Warm- blooded vertebrates with feathers.

(ii) Given below is the diagram of maize grain. Read the information below the diagram and fill in the blanks:

[5]

Maize grain is a one-seeded dry fruit, where the seed coat is fused with the pericarp, i.e., wall of the fruit. Maize grain is yellowish in colour. On one side of the grain is a small, opaque and whitish area in which embryo lies embedded.



Maize grain consist of (a) _____ unequal portions divided by a thin layer called (b) _____. The bigger portion is the (c) _____ which lie towards the broader side. It stores food in the form of (d) _____. The outermost layer contains only protein and is called (e) _____ layer.

(iii) Arrange the terms in each group in the correct order. Write them in a logical sequence beginning with the term that is underlined.

[5]

- (a) Pollen tube, Stigma, Ovary, Pollen grain
- (b) Cytoplasm, Cell wall, Nucleolus, Nuclear membrane
- (c) Seed, Germination, Fertilisation, Pollination
- (d) Organ, Cells, Organism, Tissue
- (e) Family, Genus , Order, Species

(iv) Read the explanations given below and name the structures :

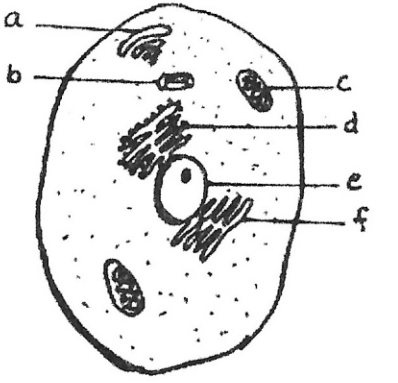
[5]

- (a) The outermost non-living covering found in a plant cell.
- (b) Special glands found at the base of the pistil or on the base of petals.
- (c) Connective tissue that joins muscles to bones.
- (d) A membrane separating the nucleus from cytoplasm.

(e) Stinging cells of cnidarians.

- (v) Given below is a diagram of a cell. Match the organelles marked (a) to (e) with their correct functions. [5]

Example: (f)- iii. Supporting framework of the cell.

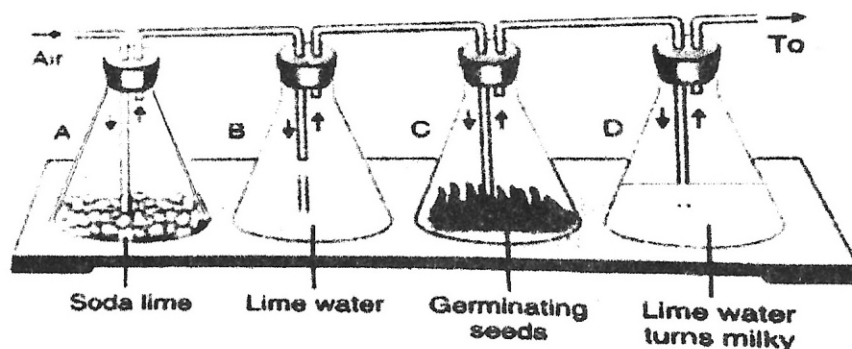
	i. Sites of protein synthesis ii. Regulates all life processes of the cell iii. Supporting framework of the cell iv. Produces and stores cell secretions v. Forms spindle fibre at the time of cell division vi. Provides energy for various metabolic functions of the cell.
---	--

SECTION B (40 Marks)

(Attempt any four questions from this section)

Question 3

- (i) What is denitrification. [1]
- (ii) Differentiate between blood and lymph. [2]
- (iii) Give two examples of dicot exalbuminous seeds. [2]
- (iv) Name two organelles found only in plant cells. [2]
- (v) Study the diagram given below and answer the questions that follow: [3]



- a) What is the function of soda lime in flask A?
- b) What changes will you observe in the lime water in flask D?
- c) What does this experiment prove?

Question 4

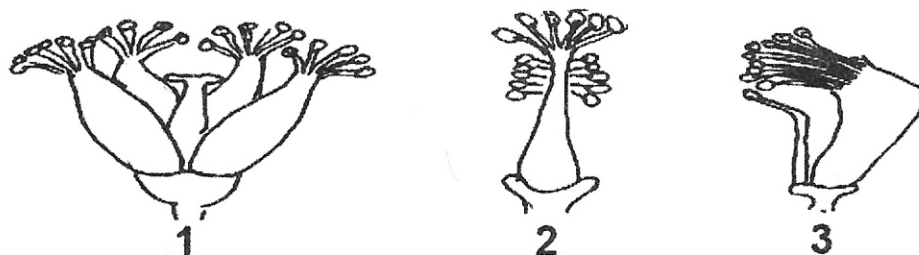
- (i) Why are mitochondria known as powerhouse of the cell ? [1]
- (ii) Define the following terms: [2]
 - (a) Moulting
 - (b) Allogamy
- (iii) What is hydrophily? Give one example. [2]
- (iv) Mention any two industrial uses of bacteria. [2]

(v) Draw a neat and well labelled diagram showing epigeal germination. [3]

Question 5

- (i) What is Nitrogen Fixation? [1]
 (ii) Mention two characteristics of class mammalia. [2]
 (iii) Differentiate between aerobic and anaerobic respiration. [2]
 (iv) What is double fertilisation? [2]
 (v) The diagram given below represents the three types of androecium. [3]

Name these types.



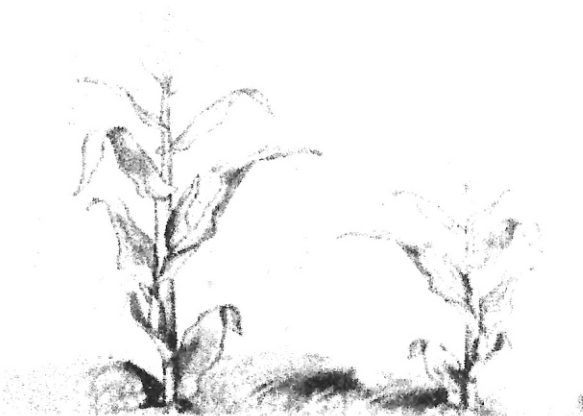
Question 6

- (i) What is nucleoplasm? [1]
 (ii) Differentiate between tendon and ligament. [2]
 (iii) Write the significance of Glycolysis and Krebs cycle. [2]
 (iv) Mention two characteristics of Kingdom fungi. [2]
 (v) Draw a neat labelled diagram showing stages of germination of pollen grain. [3]

Question 7

- (i) What is dicogamy? [1]
 (ii) Write two functions of plastids. [2]
 (iii) Define the following terms: [2]
 a) Vivipary b) Germination
 (iv) Write the full form of DNA and ADP [2]
 (v) The diagram given below shows a type of cross-pollination. [3]

Study the diagram and answer the following questions.

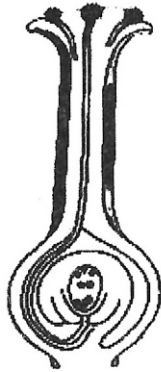


- (a) Name the pollinating agent.
 (b) Give one characteristic of the flower pollinated by the above agent.
 (c) Give the term for this type of pollination.

Question 8

- (i) What are bioweapons? [1]
- (ii) State the difference between albuminous and exalbuminous seeds. [2]
- (iii) Why are Bryophytes called amphibians of the plant kingdom ? [2]
- (iv) Give two disadvantages of self pollination. [2]
- (v) The diagram given below represents the L.S of a pistil. [3]

Study the diagram and answer the following questions:



- (a) What is fertilisation?
- (b) What happens to the ovule after fertilisation?
- (c) What is triple fusion?

END