



ST. JOSEPH'S COLLEGE, PRAYAGRAJ
HALF-YEARLY EXAMINATION 2025-26

BIOLOGY
CLASS – IX

TIME: 2 Hours

MM: 80

This paper consists of Section A and Section B. All the questions are compulsory in Section A and Section B. Read each question carefully and then write the answers. Do not change any question number, copy the same and correct question numbers as given in the paper. Do not copy the questions. Marks of each question, or its sub-parts, are given alongside the bracket []

SECTION – A

Q 1) Choose the correct answers to the questions from the given options:

[15]

- (i) A well-defined nucleus is absent in
 - a) Plant Cell
 - b) Animal Cell
 - c) Prokaryotic Cell
 - d) Eukaryotic Cell
- (ii) Assertion(A): The permanent tissues lose its ability to divide.
Reason(R): The permanent tissues may be living or dead and have a definite size, shape and thickness.
 - a) A is True but R is False.
 - b) A is False but R is True.
 - c) Both A and R are True.
 - d) Both A and R are False.
- (iii) When the anthers mature first followed by stigma. It is called
 - a) Protogyny
 - b) Protandry
 - c) Self-sterility
 - d) Herkogamy
- (iv) Mr. Bean asked his students to give an example of two seeds in which aleurone layer is present.
Ram said: Sunflower and Rice
Sita said: Sunflower and Maize
Amit said: Rice and Maize
Ritik said: Wheat and Peas
Who is correct?
 - a) Ram
 - b) Sita
 - c) Amit
 - d) Ritik
- (v) The characteristic features of Sclerencyma are
 - a) Living cells with thin walls
 - b) Dead cells with thin walls
 - c) Living cells with thickened walls
 - d) Dead cells with thickened walls
- (vi) The four whorls of a flower are attached to which structure?
 - a) Petals
 - b) Pistil
 - c) Pollen
 - d) Thalamus
- (vii) The number of antipodal cells present in the embryo sac is
 - a) 1
 - b) 3
 - c) 7
 - d) 0
- (viii) How many ATP molecules are produced from one molecule of glucose in plants?

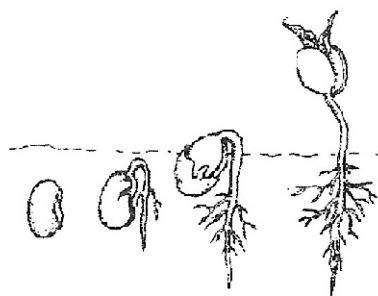


- a) 38
b) 34
c) 32
d) 28
- (ix) Assertion(A) : Respiration is compared to burning as both release energy and produce carbon dioxide and water vapour.
Reason(R) : Combustion is a controlled biological process.
a) A is True but R is False
b) A is False but R is True
c) Both A and R are True
d) Both A and R are False
- (x) Name the organelle in which anaerobic respiration occurs
a) Cytoplasm and Mitochondria
b) Only Cytoplasm
c) Only Mitochondria
d) Vacuole
- (xi) Match the following cell organelle with their function in a plant cell.
- | Cell Organelle | Functions |
|----------------|------------------------------------|
| P | Storage of Starch, oil or proteins |
| Q | Responsible for colours in flowers |
- a) P-Chloroplast, Q-Chromoplast
b) P-Chloroplast, Q- Leucoplast
c) P- Leucoplast, Q- Chromoplast
d) P-Leucoplast, Q-Chloroplast
- (xii) In animal tissues, the nerve cells ___X___ and the muscle cells ___Y___.
a) X- conduct signals, Y- Contract and relax
b) X- store nutrients, Y- digest food
c) X- protects, Y- conduct signals
d) X- contracts and relax, Y- digests food
- (xiii) The tissue that connects ovule to the ovary wall.
a) Receptacle
b) Placenta
c) Synergids
d) Embryo sac
- (xiv) After fertilization in plant, the petals, stamens, style and stigma of flower
a) Change to fruit
b) Change to seed
c) Fall off
d) Remain intact
- (xv) The arrangement of flower in a plant is called
a) Perianth
b) Bract
c) Placentation
d) Inflorescence

Q 2) (i) Name the biological terms:

- a) The tissue responsible for growth in a plant.
b) Cell organelle responsible for production of digestive enzymes.
c) Flowers that do not open.
d) The outer layer of seed that protect it from pathogens and injuries.
e) The site of Kreb's cycle.

(ii) The diagram given below represents the process of seed germination. Observe the diagram and fill in the blanks: [5]



The bean seed absorbs water and swells. The ____1____ grows downwards to form root system. The arched ____2____ grows forming a loop above the soil, it straightens bringing ____3____ above the soil. The germination is therefore ____4____. The ____5____ becomes the first green leaves and soon fall off after the foliage leaves grow.

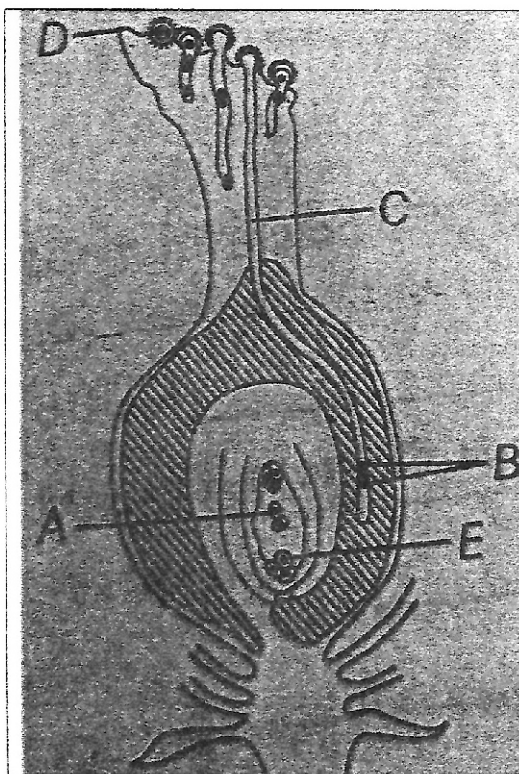
(iii) Correct the statements by changing the underlined words: [5]

- Tegmen is a scar present on the seed that represents attachment of ovule with ovary wall.
- Energy released in aerobic process is equal to that in anaerobic process.
- Hydrophily is the pollination carried out by birds.
- Areolar tissue serves as a fat reservoir.
- Perianth flowers have neither stamens nor carpels.

(iv) In the table given below the diagram represents the process of fertilisation in a flower. Match the structures with correct functions. [5]

Floral structures

Functions



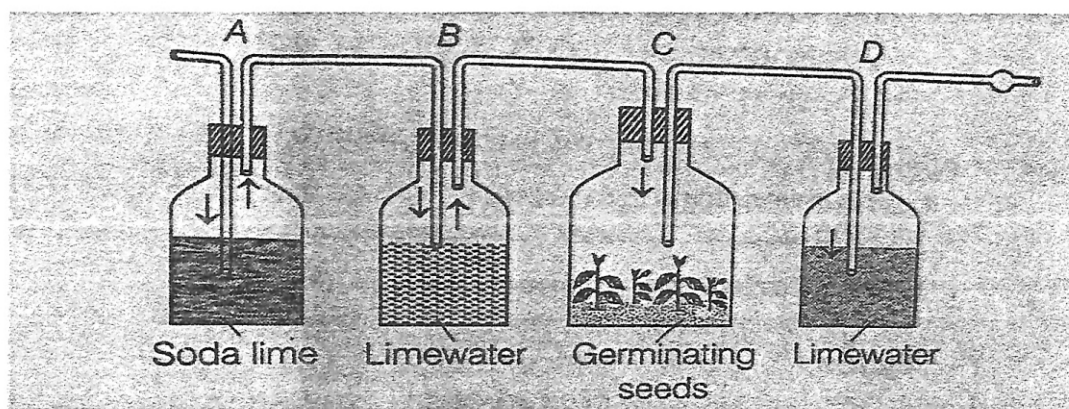
1. Receives the pollen during pollination.
2. Delivers the male gametes to the ovule.
3. Performs double fertilization.
4. Fertilised by the male gamete to form zygote.
5. Form the primary endosperm nucleus.

- (v) Choose the odd one from the following terms and name the category to which other three belong. [5]
- a) Parenchyma, Cartilage, Collenchyma, Sclerenchyma.
 - b) Nuclear membrane, Nucleolus, DNA, Cytoplasm.
 - c) Anther, Filament, Stigma, Pollen sac.
 - d) Pea, Maize, Gram, Bean.
 - e) Bisexuality, Unisexuality, Self-sterility, Heterostyly.

SECTION – B

Q 3)

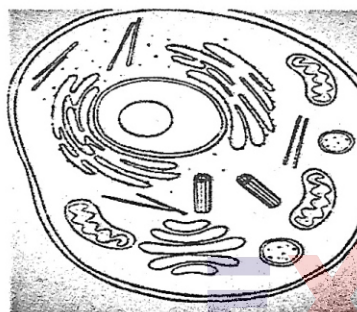
- (i) Define seedling. [1]
- (ii) Sleeping under a tree during day is good. Justify the statement. [2]
- (iii) A tiny pore micropyle is situated in a seed. Mention its two functions. [2]
- (iv) Differentiate between Homogamy and Dichogamy. [2]
- (v) Observe the figure and answer the following questions [3]



- a) Name the physiological process being studied.
- b) Why is limewater placed in bottle B?
- c) Would there be any change taking place in bottle D?

Q 4)

- (i) Define allogamy. [1]
- (ii) Differentiate between polyandrous and Polyadelphous. [2]
- (iii) Which tissues are known as the protective tissues of plants? Explain [2]
- (iv) Write balanced equations for [2]
- a) Aerobic respiration
- b) Anaerobic respiration
- (v) The diagram given below shows some of the structures present in an animal cell. [3]



Which structures are responsible for:

- a) Manufacture of lipids and steroids
- b) Release of energy
- c) Manufacture of hormones and digestive enzymes.



Q 5)

- (i) What is viviparous germination? [1]
- (ii) We notice that both very low and very high temperature are unsuitable for germination. Why? [2]
- (iii) How is artificial pollination done? [2]
- (iv) Differentiate between essential and accessory parts of a flower. [2]
- (v) Draw a well labelled diagram of a germinated pollen grain. [3]

Q 6)

- (i) Define placentation. [1]
- (ii) Differentiate between tendon and ligament. [2]
- (iii) Seeds sown very deep in soil fail to germinate. Give two reasons in support of your answer. [2]
- (iv) Give two characteristic features of anemophilous flower. [2]
- (v) Observe the diagram and answer the following questions [3]



- a) Name the muscles which helps in locomotion.
- b) Explain the structure of these muscles
- c) Name the organs in which these muscles are present.