



DELHI PUBLIC SCHOOL NEWTOWN
SESSION 2023-2024
HALF YEARLY EXAMINATION

CLASS: IX
SUBJECT: BIOLOGY [SET A]

FULL MARKS: 80
TIME: 2 HOURS

*Answers to this paper must be written on the paper provided separately.
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.
The intended marks for questions or parts of questions are given in brackets [].
This question paper consists of 6 printed pages.*

SECTION A (40 Marks)
(Attempt all questions from this section)

Question 1

Select the correct answers to the questions from the given options. (Do not copy the question. Write the correct answer only): [15]

- i. Assertion (A)- Chromosomes contain hereditary units called genes.
Reason (R)- Genes help in transmission of characters from parents to offsprings.
 - a. Both A and R are false
 - b. A is true and R is false
 - c. A is false and R is true
 - d. Both A and R are true
- ii. Ravi went to a zoo and he was observing a variety of animals among which he liked different types of snakes, various kinds of birds and the tiger. He understood that the tiger is different from the birds and the snakes. Which of the following characteristic feature makes the tiger different from the birds and the snakes?
 - a. Presence of hair on the body
 - b. Presence of three chambered heart
 - c. Presence of four chambered heart
 - d. Presence of two chambered heart
- iii. Calyx with free components is known as:
 - a. Gamosepalous
 - b. Polypetalous
 - c. Polysepalous
 - d. Gamopetalous
- iv. Animals with soft body and calcareous exoskeleton and muscular foot belong to Phylum:
 - a. Nematoda
 - b. Mollusca
 - c. Platyhelminthes
 - d. Annelida

- v. Flowers pollinated by birds:
- | | |
|-------------------|------------------|
| a. Ornithophilous | b. Hydrophilous |
| c. Anemophilous | d. Entomophilous |
- vi. In Hypogeal Germination plumule comes out of the ground due to elongation of:
- | | |
|--------------|-------------|
| a. Hypocotyl | b. Epicotyl |
| c. Cotyledon | d. None |
- vii. Which one of the following is an example of dicot exalbuminous seed?
1. Castor, 2. Pea, 3. Rice, 4. Wheat.
- | | |
|-----------------|-----------|
| a. Both 1 and 2 | b. Only 2 |
| c. Both 1 and 4 | d. Only 3 |
- viii. Soham lives in a hilly area and he observed that there was a swelling in his neck region. When he went to a doctor, he found that he was suffering from Goitre, which is caused due to the deficiency of _____ mineral. Identify from the following the lack of which mineral causes Goitre.
- | | |
|-----------|--------------|
| a. Sodium | b. Potassium |
| c. Iodine | d. Calcium |
- ix. Which substance activates the enzyme pepsin in human body?
- | | |
|----------------------|-----------------|
| a. Bile | b. Steapsin |
| c. Hydrochloric acid | d. Enterokinase |
- x. Part of the human body where digestion does not take place:
- | | |
|--------------------|------------|
| a. Oesophagus | b. Mouth |
| c. Small intestine | d. Stomach |
- xi. Which of the following works with calcium to build strong bone?
- | | |
|--------------|--------------|
| a. Vitamin A | b. Vitamin D |
| c. Iron | d. Vitamin C |
- xii. A layer of endosperm in maize grain which is rich in protein:
- | | |
|-------------------|------------------|
| a. Aleurone layer | b. Albumin layer |
| c. Tegmen layer | d. Testa layer |
- xiii. In an exalbuminous seed, food is stored in:
- | | |
|--------------|---------------|
| a. Endosperm | b. Cotyledons |
| c. Testa | d. Hypocotyl |
- xiv. Aerobic respiration is also known as:
- | | |
|----------------|--------------|
| a. Anoxybiotic | b. Probiotic |
| c. Exergonic | d. Oxybiotic |
- xv. The monosaccharide units that comprise the disaccharide Maltose are:
- | | |
|------------------------|--------------------------|
| a. Glucose + Glucose | b. Glucose + Fructose |
| c. Glucose + Galactose | d. Galactose + Galactose |

Question 2

(i) Name the following: [5]

- a. Connective tissue which stores fat.
- b. Androecium of a flower in which stamens are free.
- c. Fusion of male and female gametes.
- d. Process by which glucose is oxidized to form carbon dioxide and water.
- e. Another name of the cell body of Neuron.

(ii) Choose the odd one out and write the correct category to which the others belong: [5]

- a. Mushroom, Yeast, Moss, Bread Mould.
- b. Orange, Lemon, Lime, Cod liver oil.
- c. Stomata, Alveoli, Lenticel, Cuticle.
- d. Protandry, Protogyny, Autogamy, Heterostyly.
- e. Seed, Tube nucleus, Polar nuclei, Synergid.

(iii) Fill in the blanks with suitable words: [5]

The salivary gland present in front and beneath the ear is known as ___a___ and it secretes saliva which contains the enzyme ___b___, which help in the digestion of ___c___ and converts it into ___d___. The food then enters ___e___ from the mouth.

(iv) Arrange and rewrite the terms in each group in the correct order so as to be in a logical sequence beginning with the term that is underlined. [5]

- a. Cotyledon, Testa, Radicle, Hypocotyl.
- b. Pyruvate, Glucose, Cytoplasm, Mitochondria.
- c. Class, Phylum, Family, Order.
- d. Ovary, Pollen grain, Stigma, Style.
- e. Saliva, Mouth, Stomach, Bolus.

(v) Match the correct answers of Column I with Column II. Please rewrite the correct pairs: [5]

Column I

- a. Polar Nuclei
- b. TAB vaccine
- c. *Clostridium*
- d. Phylloquinone
- e. Haversian canal

Column II

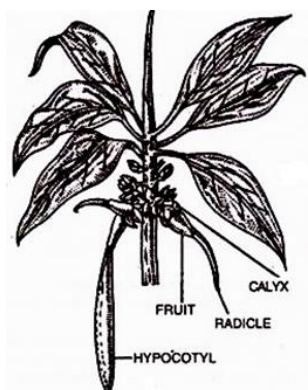
- a. Killed bacteria
- b. Living protozoan
- c. Form Endosperm
- d. Bone
- e. Nitrogen fixing bacteria
- f. Haemorrhage
- g. Osteomalacia

SECTION B (40 Marks)

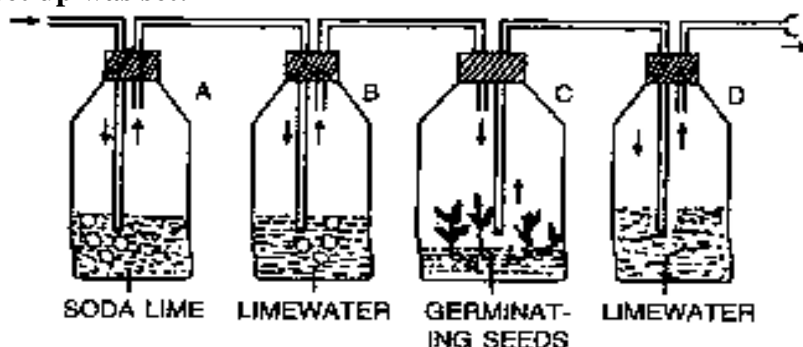
(Attempt any four questions from this section)

Question 3

- (i) Name the phylum in which animals have spiny body and are radially symmetrical. [1]
- (ii) Differentiate between Xylem and Phloem on the basis of their components. [2]
- (iii) Identify the type of germination shown in the below given diagram and define the process. [2]



- (iv) Give reasons for the following statements: [2]
 - a. Maize flower produce a large number of pollen grains.
 - b. In some flowers stigma is sticky.
- (v) In order to study a particular physiological process in plants, the following experimental set up was set: [3]



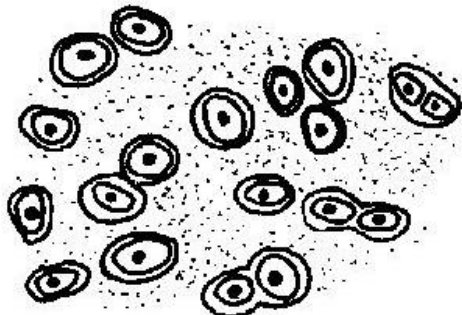
- a. Identify the physiological process being studied.
- b. What is the function of soda lime in bottle A?
- c. In order to obtain accurate results, the bottle "C" should be covered with black paper. Explain why?

Question 4

- (i) Name the first antibiotic which was produced from a fungus. [1]
- (ii) Mention any two symptoms of the deficiency disease Kwashiorkor [2]
- (iii) Name a bacteria found in the root nodules of leguminous plants. Name a serious food poisoning caused due to bacteria in tinned foods. [2]
- (iv) Define Anaerobic Respiration in plants. Mention the equation. [2]
- (v) Draw a well labelled diagram of an Animal cell. [3]

Question 5

- (i) Name the hardest substance in our body. [1]
- (ii) Explain the term “Double Fertilisation”. [2]
- (iii) Name the outer and inner layer of the seed coat. [2]
- (iv) Study the diagram given below and answer the following questions: [2]



- a. Mention the structural features of the above tissue.
- b. Mention one important function of the tissue.
- (v) Draw a neat labelled diagram of a maize grain. [3]

Question 6

- (i) Define protandry. [1]
- (ii) Mention one important function of Striated Muscle and Leucoplast. [2]
- (iii) Differentiate between Cell Wall and Cell Membrane on the basis of their chemical composition. [2]
- (iv) “*Hibiscus* is a complete flower”. Explain this statement. Name a flower in which we can find leaf like colourful bracts. [2]
- (v) Identify the kingdom of the organism shown below and write two characteristic features of the kingdom. [3]



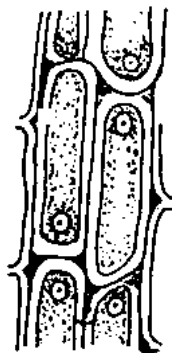
Question 7

- (i) Why is ATP known as the energy currency of the cell? [1]
- (ii) Mention the name of any one deficiency disease caused due to the lack of Vitamin A and name any two sources of food from which we derive Vitamin A. [2]
- (iii) Mention two important characteristics of the kingdom Protista. [2]
- (iv) Mention two ways in which bile plays an important role in digestion. [2]

- (v) Answer the following questions: [3]
- Name the type of nucleus we find in bacteria.
 - Mention the kingdom to which bacteria belongs.
 - Mention the disease which is cured by the antibiotic Streptomycin.

Question 8

- Mention the name of the phylum in which we find *Ascaris*. [1]
- 'Mitochondria is known as the power house of the cell'. Explain with reasons. [2]
- Differentiate between dioecious and monoecious plant on the basis of definition. [2]
- Identify the tissue given below and write the structural features of the tissue. [2]



- (v) Mention the major findings of the cell theory. [3]