

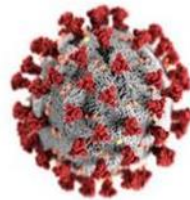
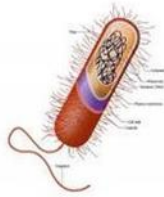
## SECTION A (30 Marks)

### Question 1

[10]

**Direction: For each question, there are four alternatives: A, B, C and D. Choose the correct alternative and circle it. Do not circle more than ONE alternative. If there are more than one choice circled, NO score will be awarded.**

- i. Component of plant cell which is absent in animal cell is
- A. Cytoplasm. C. Cell wall.  
B. Cell membrane. D. Nucleus.
- ii. Sonam is solving a mathematical problem. Which part of the brain is he using?
- A. Medulla oblongata. C. Cerebellum.  
B. Cranium. D. Cerebrum.
- iii. Which of the figure below is a multi-cellular organism?



- A. Fish C. Covid-virus  
B. Bacteria D. Rock
- iv. Which one of the following is the disease caused by bacteria?
- A. Cholera. C. malaria  
B. AIDS. D. Ring worm.
- v. When does aerobic respiration takes place?
- A. In the absence of oxygen. C. In the presence of oxygen.  
B. In the absence of carbon dioxide. D. In the presence of carbon dioxide

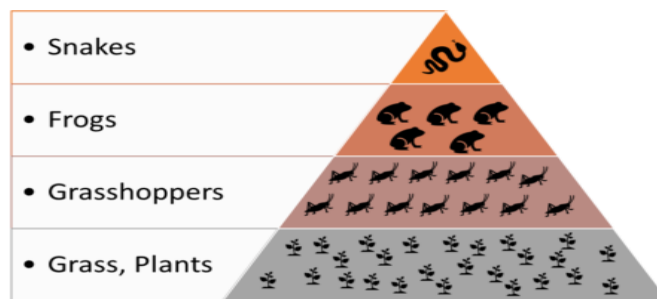
vi. The main function of a leaf is

- A. To prepare food.
- B. To support the plant.
- C. To prevent diseases.
- D. To give a proper shape.

vii. Black necked cranes come to Bhutan only in winter from North. This adaptive behaviour of animal is called:

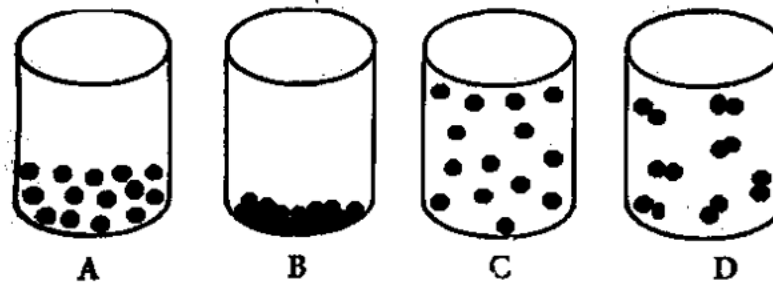
- A. flying.
- B. hunting.
- C. migration.
- D. aestivation.

viii. In which level does the frogs fall in the following pyramid?



- A. Secondary level.
- B. Primary level.
- C. Tertiary level
- D. Producers level.

ix. Which of the following diagram shows the result of removing heat from a gas sample until it freezes.



- A. Figure C
- B. Figure D
- C. Figure C
- D. Figure A

x. Which of the following fruits contains ascorbic acid?

- A. Spinach.
- B. Grapes.
- C. Unripe mangoes.
- D. Amla.

## Question 2

[7]

**Direction: Fill in the blanks with appropriate words.**

- i. Nucleolus is present inside a \_\_\_\_\_ of a cell.
- ii. The release of ovum from the ovary is called \_\_\_\_\_.
- iii. \_\_\_\_\_ is a disease in children caused by deficiency of protein, carbohydrate and fats.
- iv. The smallest and simplest unit of carbohydrate is \_\_\_\_\_.
- v. Calcium is an example of \_\_\_\_\_ nutrient.
- vi. The seed contains a fleshy structure called \_\_\_\_\_.
- vii. Formation of new species is called \_\_\_\_\_.

## Question 3

[7]

**Direction: Write TRUE or FALSE against each statement in the space provided.**

- i. The feeding relationship which represents the flow of energy between living organisms is called food chain and it always begin with a producer. (\_\_\_\_\_)
- ii. Occurrence of differences amongst the individuals of a species is called speciation. (\_\_\_\_\_)
- iii. Mendeleev arranged the elements based on their atomic number. (\_\_\_\_\_)
- iv. There are 7 groups and 18 periods in the modern periodic table. (\_\_\_\_\_)
- v. The acids which are derived from plants and animals are called organic acids. An example of such acid is Lactic acid. (\_\_\_\_\_)
- vi. When acid is dissolved in water it produces hydroxyl ions. (\_\_\_\_\_)
- vii. During photosynthesis oxygen is released. (\_\_\_\_\_)

**Question 4****[6]****Direction: Match each item in column I against the most appropriate item in column II.****Write the letter against the number in Column III.**

Column A	Column B	Column III
i. Epicotyl elongates first in	a. Mercury	i. →
ii. The terminal ends of the respiratory system	b. Neuron	ii. →
iii. Metal that is used in thermometer	c. Carbon	iii →
iv. Structural and functional unit of nervous system.	d. Hydrochloric acid	iv. →
v. An element used in pencil lead.	e. Beans	v. →
vi. The type of acid present in lemon	f. Peas	vi. →
	g. Alveoli	
	h. Citric acid	

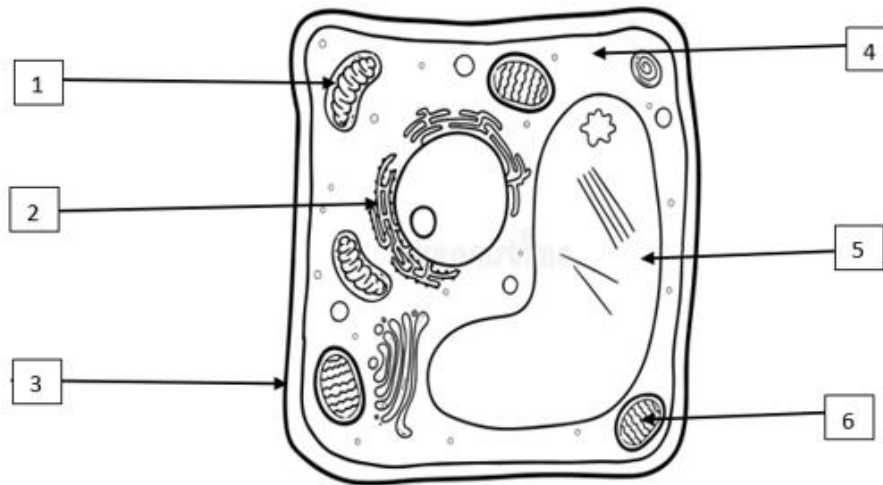
### Section B (50 Marks)

**Direction:** Answer the following questions in the separate answer sheet provided to you.

**Write the question number correctly and clearly. The marks for each question are given in the brackets [ ].**

#### Question 5

- a. In the diagram of plant cell shown below label the parts numbered. [3]



- b. Define cell in your own words. [1]
- c. Name the **TWO** types of cell. [1]
- d. Name **ANY TWO** types of plastids in plant cell and explain them briefly. [2]
- e. Explain briefly about the types of food given below with an example each [3]
- i. Carbohydrates.
  - ii. Proteins.

#### Question 6

- a. Write down **ANY TWO** differences between animal cell and plant cell. [2]
- b. Draw the structure of an atom and label nucleus, proton, electron and neutron. [3]
- c. Write down the function of a bone marrow. [1]

- d. In the table given below write the correct answer against the number provided in the answer sheet. [2]

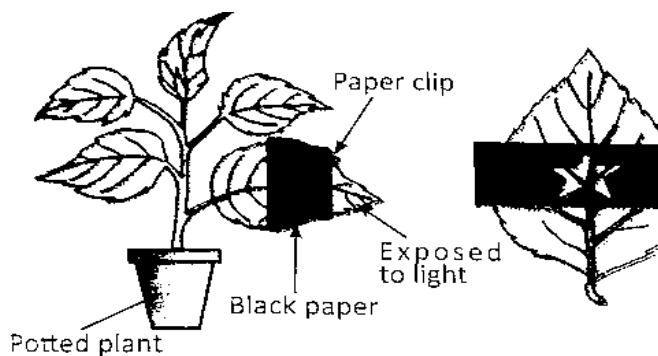
Source of Minerals	Importance	Deficiency disease
a) .....	Formation of red blood cell	b) .....
c).....	d).....	Poor growth of bones and teeth

- e. Nima and his group were investigating plants as group activity in the school campus. They noticed a plant X with yellow leaves with stunted growth. They concluded that plant X lacked some nutrients, although it received enough sunlight.

- Name the nutrient deficient in the plant X? [1]
- Write down **ANY TWO** ways to improve the health of the plant. [1]

### Question 7

- Write **ANY ONE** secondary sexual characteristic for a male and a female. [2]
- The diagram given below is an experiment conducted on a potted plant.



- What is the aim for the above experiment? [1]
  - Why leaf is covered with a black paper? [1]
  - What do you observe during the iodine test after the plant has been kept for 4 to 5 hours in the sunlight? Give reason for your observation. [2]
- c. What is a habitat? [1]

d. Read the information about feeding relationship carefully and answer the following questions.

- A. Greenflies and moth larvae feed on oak tree leaves.
- B. Ladybirds feed on greenflies.
- C. Woodpecker feeds on greenflies, moth larvae and ladybirds.
- D. Hawks prey on woodpecker

i. Draw a food chain using the names of organisms from a to d. [2]

ii. Identify the producers. [1]

### Question 8

a. Name two types of ecosystems with an example for each. [2]

b. Write down **ANY TWO** factors that creates imbalance in the ecosystem. [2]

c. Write down the symbols for the following elements. [2]

Element	Symbol
a. Hydrogen	
b. Chlorine	
c. Sulphur	
d. Sodium	

d. Write down **ANY TWO** properties of a metal. [2]

e. Write down **ANY TWO** features of a modern periodic table. [2]

### Question 9

- a. What are macro nutrients? Name any two primary nutrients. [2]
- b. What is an ion? [1]
- c. The table below shows the pH value of five solutions. Study the table carefully and answer the following questions.

Solution	A	B	C	D	E
pH value	9	6	10	3	2

- i. Which solution is most acidic and which one is most alkaline? [1]
- ii. Which solution is nearest to neutral? [1]
- iii. What are bases? Give **ANY TWO** examples. [2]
- b) Study the figure below and answer the following questions.



a) Carbonated drink



b) Car battery



c) Fire extinguisher



d) Tomato ketchup

- i. What do all these items in the pictures have in common? [1]
- ii. Which of these items contain organic acid? [1]
- iii. What is the purpose of acid in item number (b)? [1]