

CLASS IX - ANNUAL EXAMINATION

BIOLOGY

SCIENCE Paper – 3

(Two 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.

Attempt all questions from Section I and any four questions from Section II.

The intended marks for questions or parts of questions are given in brackets [].

SECTION I (40 Marks)

Attempt all questions from this Section

Question 1

- (a) Name the following: [5]
- (i) An organisation that extends relief during floods, earthquakes etc.
 - (ii) The tissue which conducts water in a plant.
 - (iii) A modified sweat gland.
 - (iv) The physical process by which air is taken in and forced out of the lungs.
 - (v) The formula which represents the number and kind of teeth in man.

(b) Choose the correct answer from each of the four options given below:

[5]

(i) The digestive juice which does not contain any enzyme:

- A. Saliva
- B. Gastric juice
- C. Bile
- D. Pancreatic juice

(ii) Which one of the following is a vitamin deficiency disease?

- A. Diabetes
- B. Goitre
- C. Marasmus
- D. Scurvy

(iii) Which one of the following diseases is caused by a fungus?

- A. Ring worm
- B. Round worm
- C. Tape worm
- D. Typhoid

(iv) Which one of the following is not an antibiotic?

- A. Penicillin
- B. Steapsin
- C. Streptomycin
- D. Chloromycetin

(v) The term neuter is given to a flower in which both:

- A. Androecium and Gynoecium are present.
- B. Calyx and Corolla are present.
- C. Androecium and Gynoecium are absent.
- D. Calyx and Corolla are absent.

- (c) Correct the statements given below by changing the underlined word: [5]
- (i) Iron is the mineral required for the proper functioning of the thyroid gland.
 - (ii) Respiration takes place in the chloroplasts.
 - (iii) Vasoconstriction occurs during summer.
 - (iv) Axis is the first cervical vertebra.
 - (v) Segregation is the disposal of waste by burning.
- (d) Given below are sets of five terms each. Rewrite the terms in a logical sequence [5] beginning with the word that is underlined:
- Example: Neck, Thorax, Tail, Abdomen, Head*
- Answer: Head, Neck, Thorax, Abdomen, Tail.*
- (i) Seed, Seedling, Pollination, Germination, Fertilization
 - (ii) Larynx, Alveolus, Trachea, Bronchiole, Nose
 - (iii) Lumbar, Cervical, Coccyx, Sacrum, Thoracic
 - (iv) Caecum, Rectum, Colon, Jejunum, Ileum
 - (v) Metacarpals, Radius, Humerus, Carpals, Phalanges
- (e) Choose the odd one out of the following terms given and name the category [5] to which the others belong:
- (i) Pesticides, Old computers, Tissue paper, Electronic toys
 - (ii) Saliva, Water, Sweat, Tears
 - (iii) Ilium, Sacrum, Ischium, Pubis
 - (iv) Whale, Seal, Shark, Dolphin
 - (v) Vitamin C, Vitamin K, Vitamin A, Vitamin E

- (f) Match the items given in Column A with the most appropriate ones in Column B and rewrite the correct matching pairs: [5]

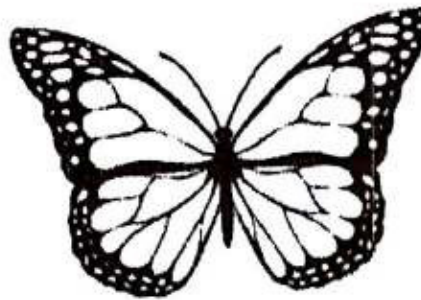
COLUMN A

- (i) Inspiration
- (ii) Glucose test
- (iii) Amoebic dysentery
- (iv) Starch test
- (v) Vector

COLUMN B

- Iodine solution
- Ribs move inward and downward
- Mosquito
- Entamoeba
- Tape worm
- Fehling's Solution
- Ribs move upward and outward

- (g) Study the picture given below and answer the questions that follow: [5]



- (i) Identify the organism.
 - (ii) Name the phylum it belongs to.
 - (iii) What is its exoskeleton made up of?
 - (iv) Explain the term 'Moulting'.
 - (v) What are Vertebrates?
- (h) Explain the following terms: [5]
- (i) Digestion
 - (ii) Antiseptic
 - (iii) Tissue
 - (iv) Heat stroke
 - (v) Peristalsis

SECTION II (40 Marks)

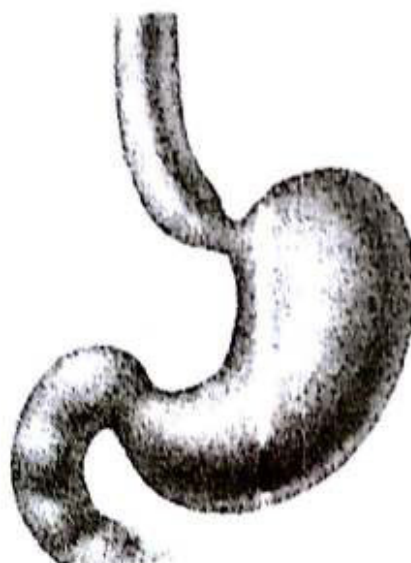
Attempt any *four* questions from this Section

Question 2

(a) The picture given below is a part of the alimentary canal.

[5]

Answer the questions that follow:



- (i) Identify the organ.
- (ii) Name the digestive juice secreted by it.
- (iii) What is the significance of hydrochloric acid in the digestive juice?
- (iv) Mention the enzyme in the digestive juice. What is its action on food?
- (v) Draw a neat, labelled diagram of an intestinal villus.

(b) Mention the exact location of the following:

[5]

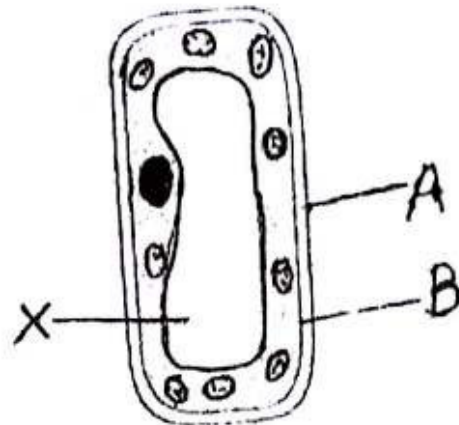
- (i) Pancreas
- (ii) Nectaries
- (iii) Sieve tubes
- (iv) Stomata
- (v) Sternum

Question 3

[5]

(a) The diagram given below shows a few parts of a cell.

Answer the questions that follow:



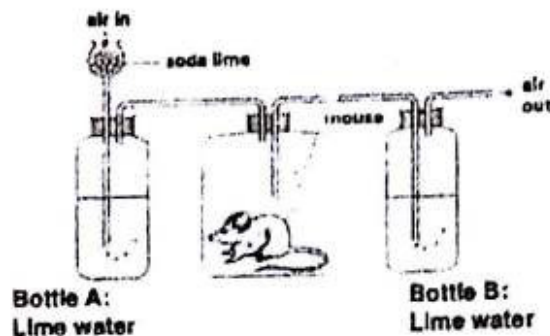
- (i) Is it a plant or an animal cell? Give a reason to support your answer.
- (ii) Name a pigment which can be present in the part labelled X.
- (iii) State the difference between the parts labelled A and B on the basis of permeability.
- (iv) Name the cell organelles concerned with the following functions.
 1. Production of energy
 2. Protein synthesis
- (v) State the functions of the following cell organelles.
 1. Golgi bodies
 2. Endoplasmic reticulum
 3. Nucleus

(b) Mention one difference between each of the following pairs with reference to what is mentioned in the brackets: [5]

- (i) Glycolysis and Krebs Cycle (Amount of energy released)
- (ii) Prokaryotic cell and Eukaryotic cell (Nucleus)
- (iii) Cellulose and Glycogen (Occurrence in organisms)
- (iv) Ascariasis and Taeniasis (Pathogen)
- (v) Respiration and Photosynthesis (Gas given out)

Question 4

- (a) Given below is an experimental setup to demonstrate a particular process in animals. Answer the questions that follow. [5]

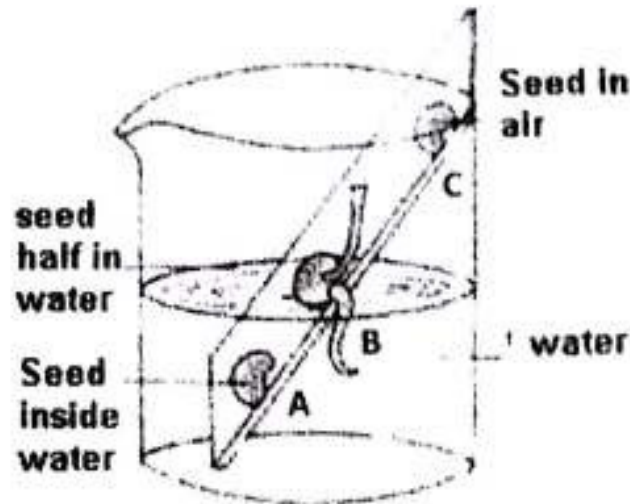


- (i) Name the physiological process being studied.
- (ii) Define the process mentioned in (i).
- (iii) What is the function of soda lime?
- (iv) After a few hours what will happen to the lime water in Bottle A and in Bottle B? Give suitable reasons for your answer.
- (v) Write a balanced chemical equation for the process carried out by the mouse.
- (b) Fill in the blanks with suitable words: [5]
- (i) Biceps and (A) _____ are (B) _____ muscles causing opposing movements.
- (ii) (A) _____ is the largest digestive gland in the human body and secretes (B) _____.
- (iii) (A) _____ is heating milk to a temperature of (B) _____ °C and then chilling quickly.
- (iv) Glucose is incompletely broken down to (A) _____ alcohol in plants during (B) _____ respiration.
- (v) Scrubbers are devices to remove (A) _____ and (B) _____ air pollutants.

Question 5

(a) The diagram given below shows three bean seeds placed at different levels. [5]

Answer the following questions:



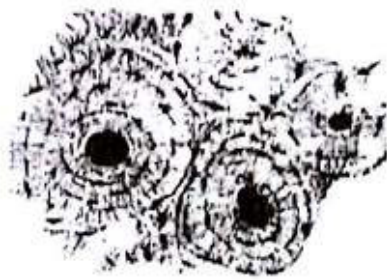
- (i) What changes will you observe in the seeds A, B and C after a few days? Explain with suitable reasons.
 - (ii) Name the part of the seed that provides nutrition for the growing seedling.
 - (iii) Draw a neat, labelled diagram showing the internal structure of a bean seed.
 - (iv) What type of germination does a bean seed show?
 - (v) Mention the parts of a flower which form the fruit and seeds.
- (b) Give biological explanations for the following statements: [
- (i) A Bat is a Mammal.
 - (ii) Leguminous plants increase soil fertility.
 - (iii) Earthworms are very useful in agriculture.
 - (iv) Roughage is an important part of our diet.
 - (v) Living rooms in our houses must receive direct sunlight for a few hours.

Question 6

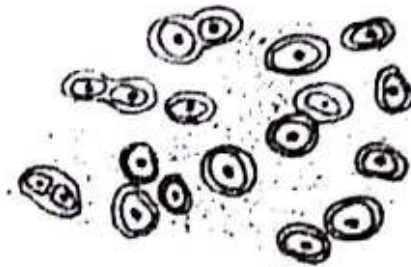
[5]

(a) The diagram given below shows the supportive connective tissue.

Answer the questions that follow:



A



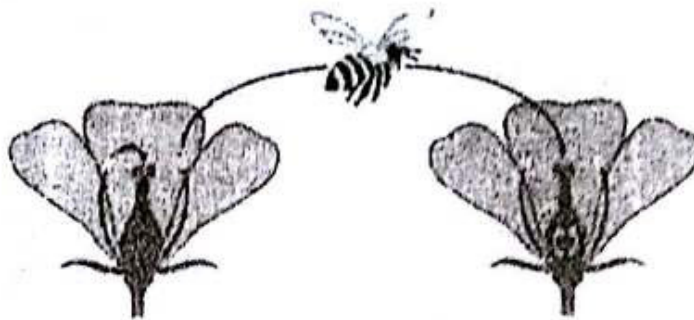
B

- (i) Identify the tissues A and B.
 - (ii) Where are the above tissues found in the human body?
 - (iii) What is a joint? Give one example of an immovable joint.
 - (iv) State the function of the Synovial fluid.
 - (v) Draw neat diagrams of the three types of blood cells.
- (b) Give the biological terms for each of the following:
- (i) Category of organisms which can interbreed among themselves.
 - (ii) Blind sacs in the lungs where exchange of respiratory gases takes place.
 - (iii) The muscular structure that manipulates food in the mouth.
 - (iv) The plastids which give red and orange colour to fruits and flowers.
 - (v) Resistance developed in the body due to a previous infection.
 - (vi) Disease in which there is no germ and cannot spread from one person to another.
 - (vii) The principal heat regulating centre in the brain.
 - (viii) The type of tissue that lines the respiratory tracts.
 - (ix) The involuntary muscles found in heart.
 - (x) Introduction of weakened germs into the body to develop resistance against a disease.

[5]

Question 7

- (a) The diagram given below represents a process occurring in a flower. [5]
Answer the questions that follow:



- (i) Name the process and explain it.
- (ii) Mention the agent involved in the above process.
- (iii) What is 'Double Fertilisation'?
- (iv) Define the term 'Inflorescence'.
- (v) Draw a neat, labelled diagram of a carpel.
- (b) Answer the following questions briefly: [5]
- (i) List any two activities of WHO.
- (ii) Write a balanced equation to represent anaerobic respiration in plants.
- (iii) Mention two functions of the human skin.
- (iv) Name the two membranes covering the lungs.
- (v) Give two examples of Amphibians.