ICSE Board
Class IX Biology
Sample Paper - 7 Solution

SECTION-I

Answer 1

(a)
(i) Haemoglobin
(ii) *Agaricus*
(iii) Iodine
(iv) Toxoids
(v) Epicotyl

(b)
(i) Cell wall (The rest are all parts of an animal cell, while the cell wall is absent in an animal cell)
(ii) Diaphragm (The rest are the structures associated with the process of cellular respiration)
(iii) Vitamin B1 (The rest are fat-soluble vitamins, while Vitamin B1 is water-soluble)
(iv) Typhoid (The rest are viral diseases, while typhoid is a bacterial disease)
(v) BCG (The rest are the killed germs category of vaccine)

(c)
(i) Epiglottis
(ii) Amylase
(iii) Antiseptic
(iv) Lacteal
(v) Diastema

(d)
(i) Erector muscle - Hair
(ii) Cancer - Carcinogen
(iii) Acetabulum - Pelvic girdle
(iv) Pupa - Cephalothorax
(v) Coccyx - Rudimentary tail

(e)
(i) 1- Stomach; 2- Small intestine; 3- Large intestine; 4- Gall bladder
(ii) Part 4, i.e. the gall bladder stores and releases bile during the process of emulsification of fats.

(f)

(i) *Streptomyces griseus*
(ii) *Streptomyces aureofasciens*
(iii) *Penicillium chrysogenum*
(iv) *Bacillus subtilis*
(v) *Streptomyces erythraeus*

(g)

(i) Ribosome: Helps in protein synthesis.
(ii) Hair in nostril: Helps trap dust containing the germs
(iii) Xylem: Helps to conduct water and minerals in plants.
(iv) Root cap: Helps to protect the root tip from mechanical injury.
(v) Bile: Emulsification of fats.

(h)

Column A	**Column B**
(i) Penicillin	Antibiotic
(ii) Cell wall	Plant cells
(iii) Plants without roots, stem and leaves	Thallophyta
(iv) Centrosome	Animal cells
(v) Moss	Bryophyta

SECTION-II

Answer 2

(a)

(i)

a) Endemic disease

When the occurrence of a disease is restricted to a particular area and affects a small number of people, it is known as an endemic disease.

Examples: Yellow fever

b) Epidemic disease

When a disease spreads from place to place followed by its outbreak, and attacks a large population at the same time it is known as an epidemic disease.

Example: Plague

c) Pandemic disease

When the occurrence of a disease is worldwide, it is known as a pandemic disease.

Example: AIDS

d) Sporadic disease

A disease occurring in single, scattered cases is known as a sporadic disease.

Examples: Malaria

(ii) The process of fruit formation without fertilisation is called parthenocarpy. E.g., Seedless grapes and bananas.

(b)

(i) Characteristics of Phylum Coelenterata:

1. Organisms belonging to this phylum exhibit radial symmetry.
2. The organisms are diploblastic, that is, they develop from a blastula that has two germ layers.

(ii) Advantages of vegetative propagation:

1. It is a rapid, easier and a cheaper method.
2. The desired characters can be preserved.
3. It is possible to form a large stock of selected strains.

Answer 3

(a)

(i) Villi are finger-like projections present on the walls of the small intestine. They have a large network of capillaries and lacteals, which increase the absorption of digested food.

The main function of the villi is to increase the surface area of the small intestine and absorb digested food materials.

(ii) A dicot seed has a seed coat made up of two layers. The outer layer is called testa and the inner layer is called tegmen. Two cotyledons are present inside the seed

coat. In between the cotyledons, an embryo is present which consists of a radicle and a plumule. The radicle changes into the root and the plumule changes into the shoot during germination.

(b)

(i) The hypothalamus act like a thermostat. When the body tends to cool below the normal temperature, it switches on or speeds up the heat-producing process. When the body tends to get overheated, it accelerates the cooling process and switches off the heat-producing process.

(ii) Ways by which the eyes can be protected from infection:

1. Wash your eyes daily with warm water.
2. Do not read in dim light.
3. Avoid watching too much of television.

Answer 4

(a)

(i) *Entamoeba histolytica* is a parasite. It lives in the intestine of man. As a result, excess water does not enter its body. Therefore, it has no contractile vacuole.

(ii) Cellular respiration takes place in mitochondria and the energy produced is stored in the form of ATP molecules. Therefore, mitochondria are regarded as the powerhouse of the cell.

(iii) Coconut fruit has a fibrous mesocarp, which provides buoyancy and can be easily dispersed through water. Therefore, coconuts are seen floating on water.

(iv) The nose contains hair and mucous which traps dust particles and bacteria. Therefore, only pure air enters inside the lungs. However, the mouth does not have hair and mucous. Therefore, the air breathed in through the mouth is not pure. That is why; one should breathe through ones nose and not through ones mouth.

(v) Fungi do not have chlorophyll and so, they cannot make their own food. They have to depend on green plants for their food. Hence, fungi are heterotrophic.

(b)

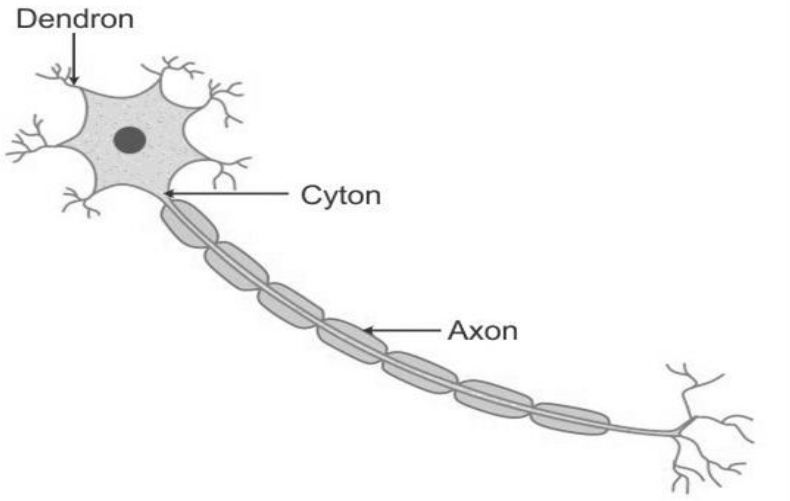
Vertebrates	Invertebrates
1. They possess an internal skeleton.	1. They have no internal skeleton.
2. They show the presence of a backbone.	2. Backbone is absent.
3. Nerve cord is dorsal and hollow.	3. Nerve cord is ventral and solid.
4. Heart is on the ventral side of the body.	4. Heart is present on the dorsal side of the body.
5. Hemoglobin is present in red blood cells (RBCs).	5. Hemoglobin if present, is found dissolved in the plasma.

Answer 5

(a)

(i) Structure of a neuron:

A neuron consists of a cell body called a cyton, which contains cytoplasm and a nucleus. Some cytoplasmic projections called dendrons arise from the cyton. The dendrons are branched into dendrites. A long projection called an axon arises from the cyton, which is covered by a medullary sheath.



(ii) The main objective of Red Cross society is to perform activities which should prevent or remove human sufferings in peace time as well as at the time of war.

(b)

(i) *Chlamydomonas*

(ii) It belongs to the group Thallophyta (Algae).

(iii) Yes, the organism is motile, and locomotion is with the help of a pair of flagella.

(iv) This plant has chlorophyll and so, it can make its own food.
It has flagella and so, it can move.

(v) This plant is found in moist places and water bodies.

Answer 6

(a)

(i) Phylum Arthropoda

(ii) Phylum Annelida

(iii) Phylum Echinodermata

(iv) Phylum Mollusca

(v) Phylum Coelenterata

(b)

(i) Lipase
(ii) Ptyalin
(iii) Lactase
(iv) Trypsin
(v) Renin

Answer 7

(a)

(i) The epidermis of the skin consists of three layers; the outer cornified layer, the middle granular layer and the inner malpighian layer.

(ii) Salient features of Phylum Porifera:

1. Most of the organisms found in this phylum are marine organisms.
2. Organisms that belong to this phylum are sessile organisms, that is they are permanently attached to a substratum and do not move around.
3. They show the presence of multiple pores on their body.
4. They have a canal system for circulation of water.

(b)

(i) Long and feathery stigma: Helps in receiving pollen grains that are dispersed by the wind.
(ii) Brightly coloured petals: Attract insects for pollination.
(iii) Smooth and light pollen: Allows the pollen to be easily carried by the wind from one place to another.
(iv) Protruding and easily movable anthers: Shed pollen even on the slightest wind movement.
(v) Fragrant nectar: Attracts insects for pollination.