

ICSE Board
Class IX Biology
Gold Series
Sample Paper – 1 (Solution)

SECTION-I

Answer 1

(a)

- (i) Cell
- (ii) HIV (Human Immunodeficiency Virus)
- (iii) Mussel
- (iv) Serum
- (v) Fungi

(b)

- (i) carpel
- (ii) water
- (iii) Apple
- (iv) hinge
- (v) Cytology

(c)

- (i) Parasitic nutrition: Parasitic nutrition is the mode of nutrition in which the organisms depend on a host for food and eventually, harm the host.

Saprophytic nutrition: Saprophytic nutrition is the mode of nutrition in which the organisms depend on dead and decayed organic matter.

- (ii) Centrosome: Centrosome is located near the nucleus in cytoplasm.

Chromosome: Chromosome is located inside the nucleus.

- (iii) Algae: Autotrophic

Fungi: Heterotrophic

- (iv) Respiration: CO_2 and H_2O

Photosynthesis: $\text{C}_6\text{H}_{12}\text{O}_6$ (glucose) and O_2

- (v) Stomata: Contain guard cells

Lenticels: Guard cells are absent

(d)

- (i) Pollination is the process of transference of pollen grains from the anther to the stigma of a flower.
- (ii) Apocarpous gynoecium is the gynoecium which contains more than one free carpel.
- (iii) Incubation period is the period between the entry of germs and the appearance of first symptom of the disease.
- (iv) Antibiotics are the chemical substances produced by a living organism that kill or stop the growth of disease-causing micro-organisms such as fungi and bacteria.
- (v) Peristalsis is the rhythmic contraction and relaxation of muscles of the oesophagus.

(e)

- (i) True
- (ii) False. In mammals, neck contains seven vertebrae.
- (iii) False. Melanin gives colour to the skin.
- (iv) False. Fats are essential components of food.
- (v) False. Some bacteria are useful, while some are harmful to man.

(f)

Name of the disease	Causative agent	Preventive measure
1. Whooping cough	<i>Haemophilus pertussis</i>	DPT vaccine
2. Tetanus	<i>Clostridium tetani</i>	Immunization
3. Malaria	<i>Plasmodium</i>	Destruction of mosquitoes
4. AIDS	HIV virus	Avoid sexual contact with infected person
5. Diphtheria	<i>Corynebacterium diphtheriae</i>	DPT vaccine

(g)

- (i) Rat
- (ii) Ostrich
- (iii) Fry
- (iv) Penicillin
- (v) *Bryophyllum*

(h)

- (i) Chloroplast
- (ii) Chloroplast is present in plant cell.
- (iii) Chloroplast helps to carry out photosynthesis.
- (iv) 1: Outer membrane; 2: Inner membrane; 3: Cytoplasm; 4: Granum

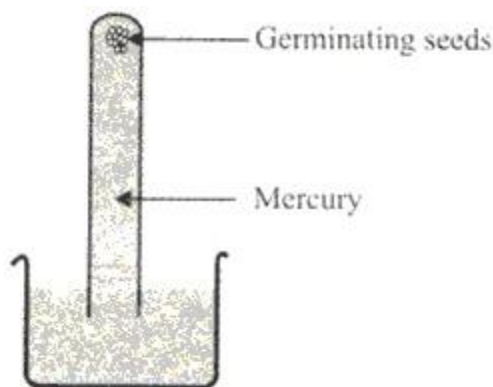
SECTION-II

Answer 2

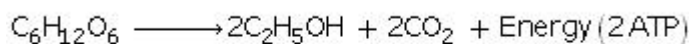
(a)

(i) The experimental set-up demonstrates anaerobic respiration.

(ii) Corrected diagram:



(ii) Chemical equation for the process:



(b)

(i) Stigma: Receives pollen grains

(ii) Chromosomes: Transmits hereditary characters from parents to offspring

(iii) Phloem: Conducts manufactured food from leaves to other parts of the plant

(vi) Sweat gland: Secretes sweat

(iv) Roughage: Increases the fibre content and thereby, prevents constipation

Answer 3

(a) Advantages of vegetative propagation: It is a cheaper, easier and rapid method. It is the only method in plants which does not produce viable seeds.

Disadvantages of vegetative propagation: The offspring are exactly similar to the parents. Variation is absent in the offspring.

(b)

- (i) Cross-pollination is the transfer of pollen grains from the anther of one flower to the stigma of another flower of the same species.
- (ii) Antibiotics are substances produced by micro-organisms and are used to kill or inhibit the growth of pathogens. E.g. Penicillin.
- (iii) Thallophyta is a group of plants in which the plant body is not differentiated into root, stem, and leaves. E.g. Algae, Fungi.
- (iv) Radial symmetry is a form of symmetry in which identical parts are arranged in a circular fashion around a central axis. E.g. Starfish has radial symmetry.
- (v) Yeast is a unicellular fungus which is used in baking industry or for wine production, etc.

Answer 4**(a)**

- (i) Nitrifying bacteria convert ammonium compounds into nitrites and nitrates.
- (ii) Harmful effects of bacteria:
 - 1. Spoilage of food
 - 2. Cause many diseases to animals and plants
 - 3. Reduce soil fertility

(b)

- (i) Striped/ Striated muscle
- (ii) 1: Dark bands/A-bands; 2: Light bands/I-bands
- (iii) It is attached to the bones of limbs.
- (iv) It is voluntary and multinucleated.

Answer 5
(a)

- (i) Nucleus
- (ii) Nucleus is the controlling centre of the cell.
- (iii) No, nucleus is not present in all the cells. Human RBCs do not contain a nucleus.

(b) The figure shows the method of grafting. In this method, a small branch of the plant is inserted into the stem of a rooted plant of the same species. The inserted portion is covered with clay to prevent the entry of bacteria and also to prevent evaporation. After sometime, the tissue of the inserted part becomes united. The inserted part is called scion and the rooted plant is called stock.

Answer 6
(a)

- (i) Hibiscus (*Rosa sinensis*)
- (ii) 1: Petal, 2: Stigma, 3: Stamen, 4: Ovary
- (iii) Hibiscus flower is coloured, so the insects are attracted by nectar and coloured corolla. Cross-pollination takes place when the insects suck nectar.

(b) Experiment to prove that air, water and temperature are needed for the germination of seeds:

Take a beaker half filled with water. Take a slide and keep three bean seeds on it. Keep the slide obliquely in the beaker, so that one seed is completely immersed in water, middle seed is half inside the water and half out of the water and the top seed is completely out of water. After few days, you will observe that the top seed does not germinate due to lack of water, the middle seed gets germinated, since it receives all the necessary conditions. The bottom seed begins to germinate, but later stops due to lack of oxygen in water.

Answer 7
(a)

(i) Micropropagation is a new technique in which a number of plantlets are obtained from a small piece of plant tissue. For micropropagation, a small piece of plant tissue is taken and grown in nutrient medium. This tissue develops into an undifferentiated mass called callus. A part of this callus is then transferred into another medium with hormones and a number of plantlets are formed. These plantlets are then transplanted in the soil.

(ii) Mosquitoes can be controlled by:

1. Elimination of breeding places
2. Spraying of insecticides
3. Biological control using *Gambusia* fish which eats the larvae of mosquitoes

(b)

(i) Characteristics of fishes:

1. They have a streamlined body.
2. They breathe through gills.
3. They have paired and unpaired fins for locomotion.

(ii)

