5. Life Processes - Board Exam Questions (1 Mark)

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1 Mark Questions (MCQ)

1) *Which structure in a leaf is mainly responsible for gaseous exchange?*
(a) Xylem (b) Stomata (c) Phloem (d) Cuticle

2) *Pancreas secretes pancreatic juice which contain certain enzyme that helps in digestion of food. Choose the correct option from the following:*
(a) Trypsin digests emulsified fats and lipase digests proteins
(b) Trypsin digests proteins and lipase digests emulsified fats
(c) Trypsin and lipase both digests fats
(d) Trypsin digests proteins and lipase digests carbohydrates

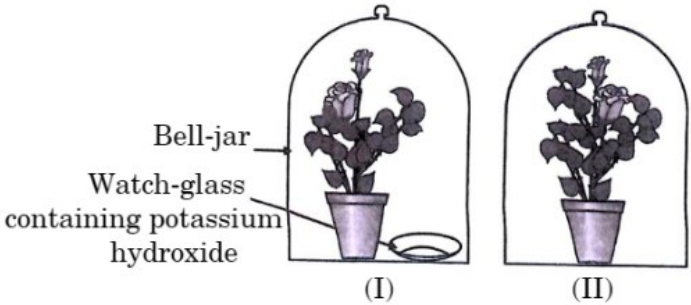
3) *The carbohydrates, which are not used immediately in plants, are stored in the form of 'a', which serves as an internal energy reserve. What does 'a' stand for?*
(a) Starch (b) Sugar (c) Fat (d) Protein

4) *The following events occur during the process of photosynthesis. Choose the option that indicates the correct events.*
(i) Oxidation of carbon dioxide to carbohydrates
(ii) Conversion of light energy into chemical energy
(iii) Absorption of light energy by chlorophyll
(iv) Conversion of hydrogen and oxygen into water
(a) (i) and (ii) (b) (ii) and (iii) (c) (iii) and (iv) (d) (i) and (iv)

5) *Pravin was given a list of characteristics associated with the process of anaerobic respiration in humans:*
Location: (i) Muscle cell
Condition: (ii) Requires presence of Oxygen (O_2) and Carbon dioxide (CO_2)

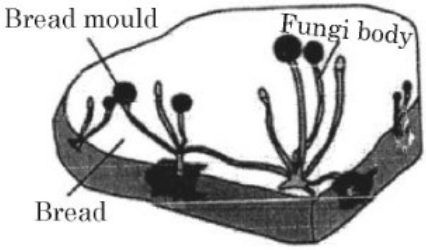
End product: (iii) 3-Carbon molecules
Which of the above characteristics is/are related to the above process?
(a) (i) and (ii) (b) (i) and (iii) (c) (ii) and (iii) (d) (i) only

6) *Observe the figure given below and identify the incorrect step for the activity set-up:*



(a) Both plants are kept in the dark room for three days before placing them in separate glass jars
(b) Both plants are covered with separate wooden bell-jars
(c) Use vaseline to seal the bottom of the jars with the glass plates
(d) Both potted plants were kept in sunlight for a few hours before the iodine test for the presence of starch

7) *Observe the given figure and select the statement that correctly states how these fungi obtain nutrition.*



(a) By eating the bread on which it is growing
(b) By using nutrients from the bread to prepare their own food
(c) By breaking down the nutrients of bread outside the body and then absorbing them

(d) By allowing other organisms to grow on the bread and then consuming them

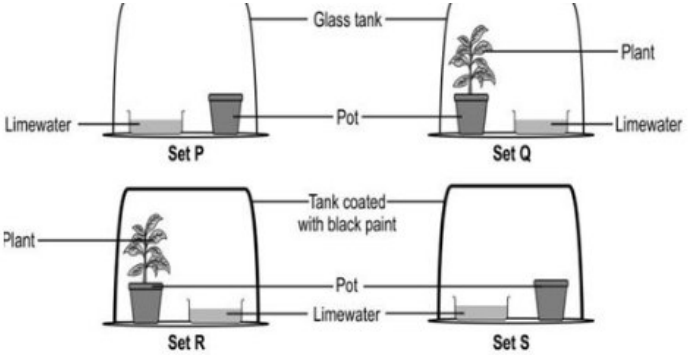
8) *In human beings the oxygen rich blood is pumped out to the body by:*
(a) contraction of right atrium (b) relaxation of left ventricle
(c) contraction of right ventricle (d) contraction of left ventricle

9) *Identify the part that controls the closing and opening of the stomatal pore in leaves of plants. Select the correct option.*
(a) Stomata (b) Epidermal cells (c) Guard cells (d) Chloroplasts

10) *Choose the equation of reaction that correctly represents anaerobic respiration in muscles:*
(a) Glucose → Pyruvate —(Absence of O_2)→ Ethanol + CO_2 + Energy
(b) Glucose —(O_2)→ Pyruvate —(O_2)→ Energy
(c) Glucose —(O_2)→ Pyruvate —(Lack of oxygen)→ Ethanol + Energy
(d) Glucose → Pyruvate —(Lack of oxygen)→ Lactic acid + Energy

11) *During photosynthesis, what happens to carbon dioxide and water as glucose is formed?*
(a) Carbon dioxide gains hydrogen, while water loses electrons
(b) Carbon dioxide loses oxygen, while water gains oxygen
(c) Carbon dioxide is oxidised, while water is reduced
(d) Both carbon dioxide and water undergo reduction

12) *Lime water turns cloudy in the presence of a gas, which is a by-product of respiration. Shown below are four setups kept in sunlight for 24 hours. In which setup is lime water expected to be the cloudiest?*



(a) P (b) Q (c) R (d) S

13) *Which of the following statement is incorrect concerning the experiment to show that sunlight is necessary for photosynthesis?*
(a) The leaf should be destarched before conducting the experiment
(b) The leaf kept in darkness will show the presence of starch
(c) The leaf exposed to sunlight will show the presence of starch
(d) Starch is the end product of photosynthesis

14) *During urine formation, tubular reabsorption and secretion take place in the kidneys. Which of the following sets correctly indicates both the substances that are reabsorbed in the kidneys?*
(a) Glucose and salts (b) Glucose and starch (c) Glycogen and salts (d) Glycogen and starch

15) *Secretion of less saliva in mouth will effect the conversion of:*
(a) proteins into amino acids (b) fats into fatty acids and glycerol
(c) starch into simple sugars (d) sugars into alcohol

16) *The breakdown of glucose has taken the following pathway:*
Glucose —(a)→ Pyruvate + Energy —(b)→ Lactic acid + Energy
The sites 'a' and 'b' respectively are:
(a) Mitochondria and Oxygen deficient muscle cells
(b) Cytoplasm and Oxygen rich muscle cells
(c) Cytoplasm and Yeast cells

(d) Cytoplasm and Oxygen deficient muscle cells

17) *The opening and closing of stomata is regulated by:*
(a) CO_2 concentration in stomata (b) Temperature in guard cells
(c) O_2 concentration in stomata (d) Amount of water in guard cells

18) *One-cell thick blood vessels are known as:*
(a) Alveoli (b) Capillaries (c) Arteries (d) Veins

19) *The gastric glands present in the wall of the stomach release:*
(a) Mucus and Trypsin (b) Pepsin and Trypsin
(c) Mucus and Pepsin (d) Pepsin and Salivary amylase

20) *The essential element taken up from the soil by the plants to synthesize proteins is:*
(a) Phosphorus (b) Nitrogen (c) Iron (d) Magnesium

21) *Select TRUE statements about lymph from the following:*
A. Lymph vessels carry lymph through the body and finally open into larger arteries.
B. Lymph contains some amount of plasma, proteins and blood cells.
C. Lymph contains some amount of plasma, proteins and red blood cells.
D. Lymph vessels carry lymph through the body and finally open into larger veins.
The true statements are:
(a) A and B (b) B and D (c) A and C (d) C and D

22) *Listed below are the steps of nutrition in Amoeba. Select the correct sequence of these steps:*
(i) Diffusion of simple nutrients into cytoplasm
(ii) Food vacuole formation
(iii) Formation of finger like temporary extensions of cell surface
(iv) Complex substances broken to simpler ones
(v) Undigested material thrown out of the cell surface

(a) (iv), (i), (ii), (iii), (v) (b) (iii), (ii), (iv), (i), (v)
(c) (ii), (i), (iv), (v), (iii) (d) (iii), (iv), (i), (ii), (v)

23) *In aerobic respiration, the steps are: breakdown of glucose to pyruvate and its further conversion to carbon dioxide. Both processes respectively occur in –*
(a) Vacuole and Cytoplasm (b) Chloroplast and Mitochondria
(c) Mitochondria and Cytoplasm (d) Cytoplasm and Mitochondria

24) *The basic filtration unit of the excretory system in human beings is:*
(a) Nephron (b) Urethra (c) Neuron (d) Urinary bladder

25) *In human alimentary canal, the digestive juice secreted by the gastric glands are*
(a) Bile, Trypsin, Pepsin (b) Hydrochloric acid, Pepsin, Mucus
(c) Lipase, Bile, Mucus (d) Salivary amylase, Pepsin, Bile

26) *Select the group in which all organisms have the same mode of nutrition.*
(a) Cuscuta, yeast, legumes, leeches and tapeworm
(b) Cactus, ticks, lice, leeches and cow
(c) Cuscuta, ticks, lice, leeches and tapeworm
(d) Cactus, grass, lice, lion and tapeworm

27) *Which of the following options indicates the products formed after breakdown of the glucose in our muscle cells when there is lack of oxygen?*
(a) Ethanol + carbon dioxide + Energy (b) Lactic acid + Energy
(c) Lactic acid + carbon monoxide + Energy (d) Carbon dioxide + Water + Energy

28) *A stomata closes when:*
(i) it needs carbon dioxide for photosynthesis.
(ii) it does not need carbon dioxide for photosynthesis.
(iii) water flows out of the guard cells.

(iv) water flows into the guard cells.
The correct reason(s) in this process is/are:
(a) (i) only (b) (i) and (iii) (c) (ii) and (iii) (d) (ii) and (iv)

29) *Which of the following statement(s) is (are) true about human heart?*
(a) Right atrium receives oxygenated blood from lungs through pulmonary artery.
(b) Left atrium transfers oxygenated blood to left ventricle which sends it to various parts of the body.
(c) Right atrium receives deoxygenated blood through vena cava from upper and lower body.
(d) Left atrium transfers oxygenated blood to aorta which sends it to different parts of the body.
(a) (a) (b) (a) and (d) (c) (b) and (c) (d) (b) and (d)

30) *In human respiratory system, when a person breathes in, the position of ribs and diaphragm will be:*
(a) lifted ribs and curve/dome shaped diaphragm
(b) lifted ribs and flattened diaphragm
(c) relaxed ribs and flattened diaphragm
(d) relaxed ribs and curve/dome shaped diaphragm

31) *In human beings, when the process of digestion is completed, the (i) proteins, (ii) carbohydrates, and (iii) fats are respectively finally converted into:*
(a) (i) Amino acids, (ii) glucose and (iii) fatty acids
(b) (i) Amino acids, (ii) glucose, (iii) fatty acids and glycerol
(c) (i) Glucose, (ii) fatty acids and glycerol, (iii) amino acids
(d) (i) Sugars, (ii) amino acids, (iii) fatty acids and glycerol

32) *The process in which transport of soluble products of photosynthesis takes place in plants is known as:*
(a) Transpiration (b) Evaporation (c) Conduction (d) Translocation

33) *During cellular oxidation of Glucose, ATP is produced along with formation of other products in this reaction. Which of the following events is associated with production of maximum ATP molecules per molecule of Glucose during this process? Synthesis of*
(a) ethanol in yeast (b) lactic acid in muscle cells
(c) carbon dioxide in yeast cells (d) carbon dioxide in human cells

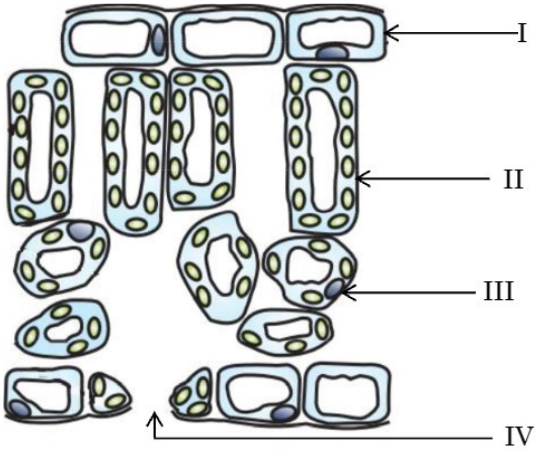
34) *Which of the following adaptations in herbivores helps in digestions of cellulose?*
(a) Longer large intestine (b) Smaller large intestine
(c) Smaller small intestine (d) Longer small intestine

35) *An organism which breaks down the food material outside the body and then absorbs it is*
(a) a plant parasite, Cuscuta (b) an animal parasite, Tapeworm
(c) a bacteria, Rhizobium (d) a fungi, Rhizopus

36) *Consider the following statements about small intestine and select the one which is NOT correct:*
(a) The length of the small intestine in animals differs as it depends on the type of food they eat
(b) The small intestine is the site of complete digestion of food
(c) The small intestine receives secretions from liver and pancreas
(d) The villi of the small intestine absorb water from the unabsorbed food before it gets removed from the body via the anus

37) *Sphincter muscles are present at the exit of:*
(a) Stomach and small intestine (b) Stomach and anus
(c) Small intestine and large intestine (d) Oesophagus and stomach

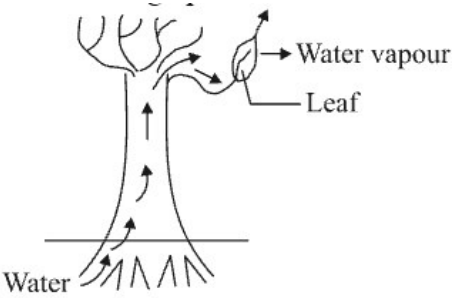
38) *In the following diagram, identify the cells through which massive amounts of gaseous exchange takes place for photosynthesis:*



(a) I (b) IV (c) III (d) II

39) *During vigorous exercise, the occurrence of cramps in the outer muscles of an athlete is due to the conversion of pyruvate to:*
(a) Glucose (b) Ethanol (c) Lactic acid (d) Lactose

40) *Observe the following diagram and identify the process and its significance from the following options:*



(a) Evaporation: maintains water contents in leaf cells
(b) Transpiration: creates a suction force which pulls water inside the plant
(c) Excretion: helps in excreting out waste water from the plant
(d) Translocation: helps in transporting materials from one cell to another

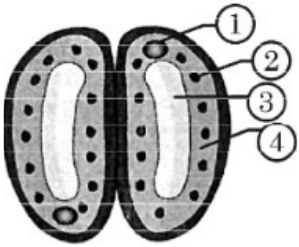
41) *The process in which loss of water in the form of vapours from the aerial parts of plants takes place is X, which helps in Y. Here X and Y respectively are:*

(a) transpiration and photosynthesis
(b) transpiration and temperature regulation
(c) translocation and movement of soluble products of photosynthesis in phloem
(d) translocation and absorption of water and minerals from soil by roots

42) *As compared to terrestrial organisms, the rate of breathing in aquatic organisms is:*

(a) faster because they need more oxygen for their survival
(b) faster because the amount of dissolved oxygen in water is fairly low
(c) slower because the amount of dissolved oxygen in water is fairly low
(d) slower because the capacity of water of dissolving atmospheric air is limited

43) *In the given diagram of a closed stomata: (1), (2), (3) and (4) respectively are*

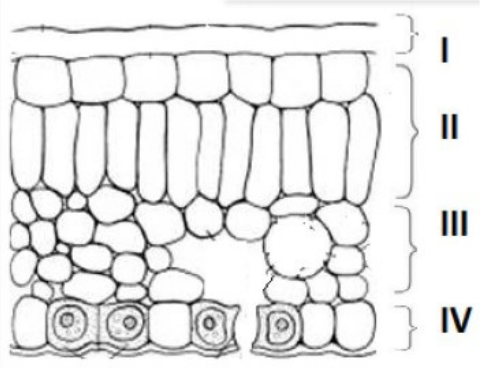


(a) nucleus, chloroplast, guard cell, vacuole (b) nucleus, chloroplast, vacuole, guard cell
(c) chloroplast, nucleus, vacuole, guard cell (d) vacuole, guard cell, nucleus, chloroplast

44) *Generally food is broken and absorbed within the body of organisms. In which of the following organisms is it done outside the body?*
(a) Amoeba (b) Mushroom (c) Paramoecium (d) Lice

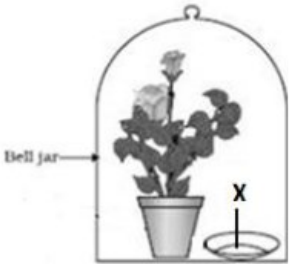
45) *A sportsman, after a long break of his routine exercise, suffered muscular cramps during a heavy exercise session. This happened due to:*
(a) lack of carbon dioxide and formation of pyruvate
(b) presence of oxygen and formation of ethanol
(c) lack of oxygen and formation of lactic acid
(d) lack of oxygen and formation of carbon dioxide

46) *In the given transverse section of the leaf identify the layer of cells where maximum photosynthesis occurs.*



(a) I, II (b) II, III (c) III, IV (d) I, IV

47) *Observe the experimental setup shown below. Name the chemical indicated as 'X' that can absorb the gas which is evolved as a byproduct of respiration.*



(a) NaOH (b) KOH (c) Ca $(OH)_2$ (d) K_2CO_3

Assertion and Reason

1) *Assertion (A): In human beings, the respiratory pigment is haemoglobin present in red blood cells.*
Reason (R): Haemoglobin has a very high affinity for carbon dioxide.

2) *Assertion (A): Blood plasma transports carbon dioxide in dissolved form, while oxygen is transported by respiratory pigments.*
Reason (R): Carbon dioxide is more soluble in water than in oxygen.

3) *Assertion (A): The basic filtration unit in the kidneys, like in the lungs, is a cluster of very thin-walled blood capillaries.*
Reason (R): Each capillary cluster in the kidney is associated with the cup-shaped end of a coiled tube called Bowman's capsule.

4) *Assertion (A): The peristaltic movements occur all along the gut.*
Reason (R): The lining of the gut has muscles that contract rhythmically to push the food in regulated manner.

5) *Assertion (A): The rate of breathing in aquatic organisms is much lower than in the terrestrial organisms.*
Reason (R): The amount of oxygen dissolved in water is less as compared to the amount of oxygen in air.

6) *Assertion (A): Animals will not get energy if they eat (consume) coal as food.*

Reason (R): Specific enzymes are needed for the breakdown of a particular food.

7) *Assertion (A): In large animals, oxygen can reach different parts of the animal's body easily.*
Reason (R): Respiratory pigments take up oxygen from the air and carry it to body tissues.

8) *Assertion (A): Xylem tissue moves water and minerals obtained from the soil by the roots.*
Reason (R): Xylem tissue is found only in the roots of a plant.

9) *Assertion (A): The rate of breathing in aquatic organisms is much faster than in terrestrial organisms.*
Reason (R): The amount of oxygen dissolved in water is very high as compared to the amount of oxygen in air.

10) *Assertion (A): In the human heart ventricles have thicker muscular walls than atria.*
Reason (R): Ventricles have to pump the blood into various organs.

11) *Assertion (A): Blood clotting prevents excessive loss of blood.*
Reason (R): Blood clotting is due to blood plasma and white blood cells present in the blood.

12) *Assertion (A): The inner walls of the small intestine have finger like projections called villi which are rich in blood.*
Reason (R): These villi have a large surface area to help the small intestine in completing the digestion of food.

13) *Assertion (A): The walls of atria are thicker than those of the ventricles.*
Reason (R): Ventricles have to pump blood into various organs at high pressure.

14) *Assertion (A): Amoeba takes in food using finger like extensions of the cell surface.*
Reason (R): In all unicellular organisms, the food is taken in by the entire cell surface.

15) *Assertion (A): Amphibians can tolerate mixing of oxygenated and deoxygenated blood.*
Reason (R): Amphibians are animals with two chambered heart