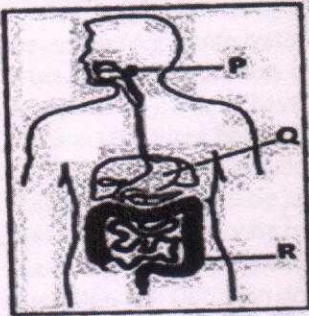


DAYANAND ANGLO VEDIC PUBLIC SCHOOL, AIROLI. 2024-25
COMPETENCY BASED QUESTIONS.
CLASS- X, BIOLOGY -VACATION ASSIGNMENT
CHAPTER: LIFE PROCESSES

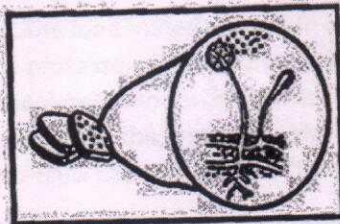
I.MCQ

1. Identify P, Q and R in the given figure?



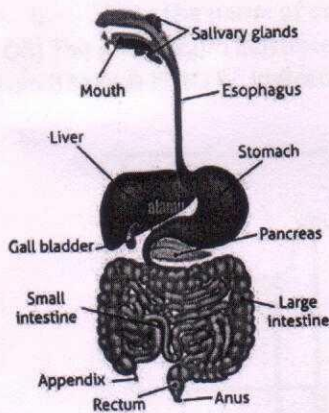
- (a) P-Gastric gland, Q-Pancreas, R-Small intestine.
- (b) P-Salivary glands, Q-Stomach, R-Large intestine.
- (c) P-Gastric gland, Q-Pancreas, R-Large intestine.
- (d) P-Salivary glands, Q-Pancreas, R-Small intestine.

2. Identify the type of nutrition exhibited by the given figure.



- (a) Autotrophic nutrition
- (b) Saprophytic nutrition
- (c) Parasitic nutrition
- (d) Symbiotic nutrition

3. Mr. Ayub is suffering from malfunctioning of the pancreas. Which of the following will be adversely affected in Mr. Ayub's body?



- (a). Digestion of vitamins
- (b). Digestion of fats
- (c). Digestion of carbohydrates
- (d). Digestion of proteins

4. Smoking is likely to cause infections in the respiratory tract. Which statement best explains the fact?

- (a). Smoking makes the hair-like structures wet and they fail to trap dust particles.
- (b). Smoking destroys the hair-like structures.
- (c) Smoking stimulates the hair-like structures to release harmful chemicals.
- (d) Smoking causes excessive growth of the hair-like structures

Q5. Which one of the following is a possibility for most of us in regard to breathing, by making a conscious effort?

- (a) One can breathe out air totally without oxygen.
- (b) One can breathe out air through Eustachian tube by closing both nose and mouth.
- (c) One can consciously breathe in and breathe out by moving the diaphragm alone, without moving the ribs at all.
- (d) The lungs can be made fully empty by forcefully breathing out all air from them.

ASSERTION AND REASONING QUESTIONS

Following questions consist of two statements – Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

- (a) Both 'A' and 'R' are true and 'R' is correct explanation of the Assertion.
- (b) Both 'A' and 'R' are true but 'R' is not correct explanation of the Assertion.
- (c) 'A' is true but 'R' is false.
- (d) 'A' is false but 'R' is true.

Q1. Assertion (A): Photosynthesis is an anabolic process.

Reason (R): The process of photosynthesis occurs in chlorophyll.

Q2. Assertion (A): Plants have low energy needs.

Reason (R): Plant bodies have large proportion of dead cells.

Q3. Assertion (A) : Carbohydrate digestion mainly takes place in small intestine.

Reason (R) : Pancreatic juice contains the enzyme lactase..

Q4. Assertion (A): Pyruvate is a six-carbon molecule

Reason (R) : It is prepared in the cytoplasm as the first step to cellular respiration

Q5. Assertion (A): Diffusion does not meet high energy requirements of multi-cellular organisms

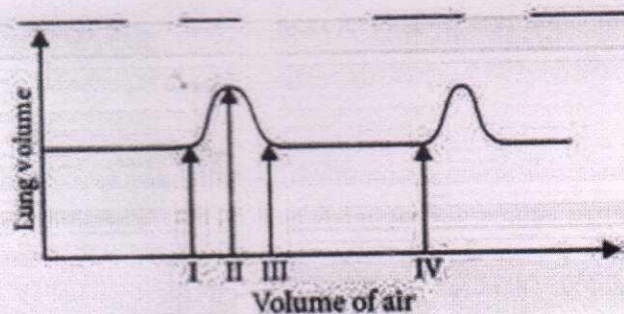
Reason (R) : Diffusion is a fast process but occurs at the surface of the body.

III.CASE STUDY BASED QUESTION :

Q1.The food material taken in during the process of nutrition is used in cells to provide energy for various life processes. Diverse organisms do this in different ways – some use oxygen to break-down glucose completely into carbon dioxide and water, some use other pathways that do not involve oxygen (Fig. 6.8). In all cases, the first step is the break-down of glucose, a six-carbon molecule, into a three-carbon molecule called pyruvate. This process takes place in the cytoplasm.

- (i) What is anaerobic respiration? Give a suitable example ?
- (ii) Explain the process which happen in our muscle cells?
- (iii) a. Why there is a faster breathing rate in aquatic animals then the terrestrial animals?
b. Write the name of organ used for respiration by different organism- fish, frog?

(OR) The given graph illustrates the changes in lung volume during the process of breathing. The change from II to III & III TO IV indicates .(any 2 Points)



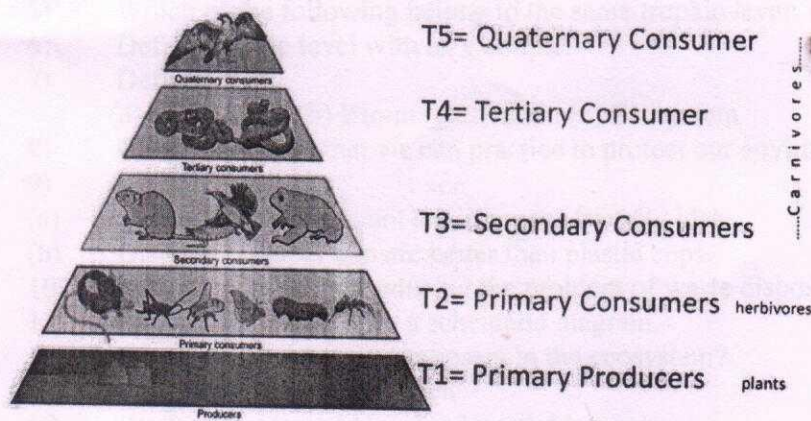
Q2.The food that we eat gets broken down into simpler compounds for absorption. There are various enzymes and hormones secreted by various glands and cells of the digestive system, which facilitate the digestion of food. The undigested food is expelled out of the body through the anus. The main organs of the digestive system include the mouth, pharynx, oesophagus, stomach, small and large intestine, rectum and anus. There are various types of digestive glands present, e.g. salivary glands, pancreas, liver, etc.

- (i) Name the enzymes present in Pancreatic Juice .
- (ii) Which gland produces bicarbonate ions and Trypsin ?
- (iii) Name the substance synthesised & stored in the liver.

OR The gland which is exocrine as well as endocrine
Which juice works in acidic medium in human alimentary canal

I. MULTIPLE CHOICE QUESTIONS

- In a given food chain if the amount of energy at the fourth trophic level is 6 kJ, what will be the energy available at the producer level?
(a) 6000 kJ (b) 20 kJ (c) 60 kJ (d) 600 kJ
- Which of the following is biodegradable waste ?
(a) DDT (b) Aluminium can (c) Plastic bag (d) Cow dung
- Which of the following is the best way for disposal of vegetable and fruit peels?
(a) Landfill (b) Recycling (c) Composting (d) Burning
- Accumulation of non-biodegradable pesticides in the food chain in increasing amount at each higher trophic level is known as:
(a) Eutrophication (b) Pollution (c) Biomagnifications (d) Accumulation
- In an ecosystem, the 10% of energy available for transfer from one trophic level to the next is in the form of:
(a) heat energy (b) light energy (c) chemical energy (d) mechanical energy
- In the given Figure the various trophic levels are shown in a pyramid. At which trophic level is maximum energy available.
(a) T4 (b) T2 (c) T1 (d) T3



7. ASSERTION REASON TYPE OF QUESTIONS

- If both Assertion and reason are true and Reason is the correct explanation of assertion
 - If both Assertion and Reason are true but Reason is not a correct explanation of the Assertion
 - If Assertion is true but the Reason is false
 - If both Assertion and Reason are false
- Assertion: Polythene bags and plastic containers are non-biodegradable substances.
Reason: They can be broken down by microorganisms in natural simple harmless substances
 - Assertion - More and more things we use becoming disposable, changes in packaging have resulted in much of our waste becoming Non-biodegradable
Reason - Biodegradable materials are environment friendly and easily degraded by the microbes in nature.

3. Assertion - A sparrow when feeds on seeds, it is a primary consumer, but when it feeds on an insect, it belongs to secondary consumer

Reason - The ecological pyramids (trophic levels) are not always reliable

CASE STUDY QUESTIONS

POLLUTION OF RIVER GANGA

The belief the Ganga River is "holy" has not, however, prevented over-use, abuse and pollution of the river. All the towns along its length contribute to the pollution load. It has been assessed that more than 80 per cent of the total pollution load (in terms of organic pollution expressed as biochemical oxygen demand (BOD)) arises from domestic sources, i.e., from the settlements along the river course. Due to over-abstraction of water for irrigation in the upper regions of the river, the dry weather flow has been reduced to a trickle.

Q1. Which of the following activities may pollute the river water more?

- (a) Bathing using detergent and soap (b) Discharging animals excreta
(c) Deposit flowers and leaves as the part of puja (d) Bathing without soap and detergent

Q2. Green Algae and Diatoms are the major producers of Aquatic ecosystem

Which of the following will be more in the aquatic ecosystem:

- (a) Small fishes (b) Large fishes (c) Algae and phytoplankton (d) Tadpole

Q3. The harmful metals that get mixed with the water bodies from the industrial units' are :

- (a) Iron and copper (b) Mercury and lead (c) Sodium and potassium (d) Magnesium and cobalt

Q4. This will be the best method to protect our River water bodies-

- (a) Grow trees along the bank of Rivers (b) Grow small fishes in River water
(c) Permitted level of sand mining (d) Making Flats or Malls near the River

ANSWER THE FOLLOWING : 2 M

- 1) Give two ways by which biodegradable substance can affect our environment.
- 2) Give two ways by which non-biodegradable substance can affect our environment.
- 3) How do you think we can contribute in controlling the ozone depletion?
- 4) Name the main source of energy in self- sustaining ecosystem?
- 5) Which of the following belong to the same trophic level: spider, crop, hawk, snail and lizard?
- 6) Define trophic level with an example.
- 7) Define
(a) CFC (b) Bio-magnification (c) Ecosystem
- 8) Give some ways that we can practice to protect our environment.
- 9) Give reasons:
(a) Use of Kulhads was not environment friendly idea.
(b) Disposable paper cup are better than plastic cups.
- 10) How can we help in reducing the problem of waste disposal? Give any two methods.
- 11) Explain 10% law using a schematic diagram.
- 12) What is the role of decomposers in the ecosystem?
- 13) Give two examples for each
(a) Biodegradable and Non-biodegradable waste
(b) Biotic and abiotic factors
(c) Natural and artificial ecosystem
- 14) What will happen if we kill all organisms in one trophic level?
- 15) Vegetarian food habits help us in getting more energy. Justify
- 16) a) How is a food chain different from food web? Discuss with a suitable example.
b) What is the significance of food chain?
- 17) DDT that was sprayed in minute amount on crops was detected in high concentration in man. Explain this phenomenon with an aquatic food chain..
- 18) Write a short note on ozone depletion and its effects.
- 19) What impact does removal of bacteria, fungi/microorganism have on our environment?
- 20) How can we help in reducing the waste disposal problem? Suggest any two methods.