

Standard High School

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السلام وعلیکم!

ہم سب آپ کے لیے دُعا گو ہیں کہ اللہ تعالیٰ آپ
سب کو اپنی حفظ و امان میں رکھے۔ اُمید ہے آپ سب
خیریت سے ہوں گے۔

آپ کے خیر خواہ

سٹینڈرڈ ہائی سکول انتظامیہ بمعہ سٹاف

شکریہ

Q.

1. Arrange these structures in order of lower level of organization to upper level of organization and write the level against each structure?

Neuron, nervous system, electron, man, mass of neurons, carbon, mitochondria, brain, protein.

Electron → Sub atomic level

Carbon → Atomic level

Protein → Molecular level

Mitochondria → Organelle level

Neuron → Cell level

Mass of neuron → Tissue level

Brain → Organ level

Nervous system → Organ system level

Man → Individual level.

Q. 2. How would you define biology and relate it with its major divisions?

Ans → Biology is the scientific study of life. Its main branches are botany, zoology and microbiology. In these branches we study living organisms so they are related to biology.

Q. 3 → How would you distinguish biomolecules from other molecules? What is the criteria of classifying biomolecules as micromolecule or macromolecule?

Ans → Biomolecules are found in living body while molecules are found everywhere.

→ Biomolecules which have low molecular weight are called micromolecules e.g. Glucose.

→ Biomolecules which have high molecular weight are called macromolecules e.g. Starch.

Q. 4 → Is there any division of labour among the cells of a colony? If you find division of labour among the cells and tissues, what level of organization is it?

Ans. There is no division of labour among cells of a colony. If there is division of labour among cells and tissues, it will be known as multicellular organization.

Q. 5 → What do you mean by Horticulture? How it is related to Agriculture?

Ans. Horticulture is the art of gardening. It is related to agriculture as it is a branch of Agriculture which deals with growing plants.

Q. 6 → What is scientific knowledge according to Dr. Abdus Salam?
According to Dr. Abdus Salam,

"Scientific knowledge is the common heritage of mankind."

Q. 7 → What are major Biological Issues today?

- ① → Human population growth
- ② → Infectious diseases
- ③ → Addictive drugs
- ④ → Pollution.

Q. 8 → What are parasites?

Ans → Parasites are the organisms that take food and shelter from living hosts and in return harm the

Q. 9 → What are species?

Ans. → A specie is defined as a group of organisms capable of interbreeding and producing fertile offspring.



Chapter 2: Solving a Biological Problem.

Q.1: How biologists recognize a biological problem?

Ans: Biologists recognize a problem when someone asks a question about it or a question comes in biologists mind by himself.

Q.2: How are observations made?

Ans: → Biologists make observations by using their five Senses i.e Vision, hearing, touch, smell and taste.
→ Secondly they make observations by studying the work of other scientists.

Q.3: Differentiate b/w Qualitative and Quantitative Observations?

Qualitative Observations

1. They are variable.
2. They cannot be recorded in terms of numbers.

Examples:

- a) Freezing point of water is colder than boiling point.
- b) A litre of water is heavier than ethanol.

Quantitative Observations

1. They are invariable
2. They are recorded in terms of numbers.

Examples:

- a) Freezing point of water is 0°C and boiling point is 100°C
- b) A litre of water weighs 1000g and ethanol weighs 789g .

Q.4. Define Hypothesis?

Ans: → Tentative explanation of the observations is called hypothesis.

OR

It is a proposition that might be true.

Q.5 → Define Theory?

→ A hypothesis often tested and never rejected is called a theory.

Q.6 → Define Law or Principle?

→ If a theory is continuously supported by experiments, it becomes a law or principle. It is a constant fact of nature.

e.g Mendel's law of Inheritance.

Q.7 → What was the remedy for Malaria?

Ans → Quinine was the remedy for malaria.

Q.8 → Why female mosquito sucks the blood of birds or mammals?

Ans → Female mosquito need the blood of mammals for maturation of their eggs.

Q.9 → Which mosquito transmits dengue fever?

Ans → 'Aedes' mosquito transmits dengue fever.

Q.10 → Why female mosquito injects saliva before drawing blood?

Ans → When a female mosquito pierces the skin with her mouth parts, she injects a small amount of saliva into the wound before drawing blood. The saliva prevents the blood from clotting in her food canal.

Q.11 → Why welts appear after mosquito bite?

Ans → The welts that appear after the mosquito leave is not reaction to the wound but an allergic reaction to the saliva. In most cases the itching and swelling subsides after few hours.

Q-12 → While testing a hypothesis that plasmodium is the cause of malaria. What could be control group of the experiment?

Ans. Blood of healthy persons.

Q-13 → How did Darwin form his theory of Evolution?

Ans. Darwin not only observed and took notes during his voyage but also read the work of other scientists to form his theory of evolution.

Q-14 → 'Man has always been a biologist.' Justify?

Ans → Man has always been a biologist. He had to be a biologist in order to live. Early in history he was a hunter of animals and a gatherer of roots, seeds and fruits. The more he knew about plants, the better he distinguished between edible and non-edible plants.

Q-15 → Why scientists perform experiments?

Ans → Scientists perform experiments to check whether hypothesis is true or not. The incorrect hypothesis are rejected and those which are proved by experiments are accepted.

Q-16 → Quantitative observations are better in biological method. Why?

Ans → Quantitative observations are invariable and record in terms of numbers. So, they are more authentic and reliable as compared to qualitative observation.

Chapter 6: ENZYMES.

Define the following:

1. Activation Energy: The minimum energy required to start a chemical reaction is called activation energy.
2. Co-enzymes: If organic cofactors are loosely attached with the enzymes, they are called Co-enzymes.
3. Lipase: The enzyme which breaks down lipids into fatty acids and glycerols is called lipase.
4. Amylase: The enzyme which breaks down starch into glucose is called amylase.
5. Denaturation: The loss of geometric shape and globular protein structure of enzymes at very high temperature called Denaturation (killing) of enzymes.
6. Active Site: The site of enzymatic reaction is called active site.
7. Catalyst: The substances which increase the speed of reaction are called Catalysts.

Q.2: Which statement is correct?

1. All enzymes are catalysts.
2. All catalysts are enzymes.

No. 1 is correct.

Q.3: What is the optimum temperature of human enzymes?

Ans: 37°C is the optimum temperature for maximum working speed of human enzymes.

Q.4: Birds have higher body temperature than mammals. What happens to activity of bird enzyme if it is given a temperature of 37°C ?

Ans: Reaction will slow down.

Q.5: What do you mean by activation energy and why it is referred in the definition of enzymes?

Ans: Activation energy is the minimum energy required to start a reaction. It is used in definition of enzymes in the way that enzymes lowers the activation energy and then speed up the reaction.

Q.6: In a range of $0-35^{\circ}\text{C}$, the rate of reaction of enzyme is proportional to temperature. Above 35°C and below 0°C enzyme activity slows down and eventually stops. Why?

Ans: Above 35°C , the heat energy increase the vibrations of atoms of enzymes and globular structure of enzymes is lost & enzymes are denatured. So, enzyme activity is blocked.

Below 0°C , enzymes will not be activated so, their activity eventually stops.

Q.7: What characteristic of enzyme makes them substrate specific?

Ans: Specificity of different enzymes is determined by the shape of their active sites. Active sites have specific geometric shape that fits with specific substrate and reaction proceeds e.g. Enzyme Protease will work only on proteins not on starch.

Write all the given short questions on neat copies and draw all diagrams of chapter 1; 2; 6 and 8 on neat copies.

If you need any guidance contact with subject teacher.

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