CBSE: 730109
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DEPARTEMENT OF SCIENCE

Grade:-10th subject:- science worksheet

Case based question 1

Zehra **and zahid are students of Class 10th from Ayesha Ali Academy. During a biology lesson, they learned that as children grow into teenagers, several physical and hormonal changes occur in their bodies. These changes are associated with the onset of puberty and prepare the reproductive system for adulthood. In females, the ovaries start producing eggs, while in males, the testes begin producing sperms. Fertilization occurs when a sperm fuses with an egg, leading to the formation of a zygote. The zygote undergoes repeated cell divisions and develops into an embryo.**

Questions:

1) **What is puberty, and why is it important in human reproduction?**
2) **Name the male and female reproductive organs responsible for producing gametes.**
3) **What are gametes? Name the gametes produced by males and females.**
4) **Define fertilization. Where does fertilization normally occur in humans?**
5) **What is a zygote, and how is it formed?**
6) **Explain the role of hormones during adolescence.**

Case based question 2

A farmer living in kulgam noticed that some of his potato plants were producing healthy crops every year without using seeds. He selected potatoes with buds (eyes) and planted them in different parts of his field. After a few weeks, new plants emerged from these buds and developed into mature potato plants. Similarly, he also grew sugarcane by planting stem cuttings. He observed that the new plants were genetically similar to the parent plants and grew faster than those produced from seeds.

Questions:

1) **Which method of reproduction is described in the case above?**
2) **Why is vegetative propagation considered an asexual mode of reproduction?**
3) **Why are the offspring produced through vegetative propagation genetically identical to the parent plant?**

Question 3:- Project based

Carbon compounds are present in fuels, food, medicines, plastics, detergents, and many household products. A group of students surveyed their homes and listed various products containing carbon compounds.

The survey results included:

LPG used for cooking
Soap and detergents for cleaning
Vinegar in the kitchen
Plastic bottles and containers
Medicines and cosmetics

Based on the project, answer the following questions:

1) **Why is carbon able to form such a large number of compounds?**
2) **What are the properties of carbon that lead to catenation?**
3) **What is the difference between saturated and unsaturated carbon compounds?**

4) Why are plastics considered carbon compounds?

Question 4:- Case Study

During a school trip to a hill station, a group of Class 10 students made several interesting observations. In the early morning, they noticed that the rising Sun appeared reddish-orange. As the day progressed, the sky looked bright blue. While walking through a foggy area, they observed that the headlights of vehicles were clearly visible even from a distance. Their science teacher also asked them to focus first on a nearby flower and then on a distant mountain, explaining that the human eye can adjust its focus automatically. One of the students' grandparents, who accompanied the trip, mentioned that they needed reading glasses but could see distant objects clearly.

1. Why does the Sun appear reddish during sunrise?

2. Describe how the ciliary muscles help the human eye focus on nearby and distant objects. Why is this process important for clear vision?

3. Explain why the sky appears blue during the daytime. Name the phenomenon responsible for this observation.

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