

Ans. pollination? ans.
the orchid bears
flowers



**ASSIGN
BUSTER**

Ans. A zygote is formed by the fusion of haploid male gamete with the haploid egg to form - a diploid cell; whereas, Primary endosperm nucleus (PEN) is formed by the fusion of haploid male gamete with two haploid polar nuclei, forming a triploid nucleus. Q. 3.

How does the floral pattern of Mediterranean orchid *Ophrys* guarantee cross pollination? Ans. The orchid bears flowers which resemble the female wasp in colour, smell, as well as appearance. The male pollinators mistake them as their female counterparts. In the process of their pseudocopulating, they pollinate the flower.

Q. 4. Banana is a parthenocarpic fruit whereas oranges show polyembryony. How are they different from each other with respect to seeds? Ans. Banana develops from an ovary without fertilisation having non-viable seeds so it is called parthenocarpic fruit. An orange contain seeds with more than one embryo thus, it shows polyembryony. Q. 5.

Cucurbits are referred to as monoecious. Justify the statement. Ans.

Cucurbits have both male and female reproductive structures on different plants (unisexual). So, they are referred to as monoecious. Q.

6. If the chromosome numbers in meiocytes of human beings, rat, elephant, rice, butterfly and onion are 46, 42, 56, 24, 380 and 32, respectively. What will be the chromosome numbers in gametes of these species? Ans. The chromosome numbers in the gametes of these species will be Human beings = 23, rat = 21, elephant = 28, rice = 12, butterfly = 190 and onion = 16. Q. 7.

In haploid organisms that undergo sexual reproduction, name the stage in the life cycle when meiosis occurs. Give reasons for your answer. Ans.

Meiosis takes place during the post-zygotic stage. Since the organism is haploid, meiosis cannot occur during gametogenesis. Q. 8.

The number of taxa exhibiting asexual reproduction is drastically reduced in the higher plants (angiosperms) and higher animals (vertebrates) as compared with lower groups of plants and animals. Analyse the possible reasons for this situation. Ans. Both angiosperms and vertebrates have a more complex structural organisation. They have evolved very efficient mechanism of sexual reproduction.

Since asexual reproduction does not create new genetic pools in the offspring and consequently hampers their adaptability to external conditions, these groups have resorted to reproduction by the sexual method. Q. 9.

What is parthenogenesis? Give two examples from animals. Ans. The development of a new individual from an unfertilised egg is called parthenogenesis. Parthenogenesis is a special mode of reproduction. It is simpler, easier as well as rapid mode of replication.

However, it eliminates the chances of variation in a population so, it does not play important role in evolution process. Examples: Honeybees and some lizards. Q. 10.

Although sexual reproduction is a long drawn, energy-intensive complex form of reproduction, many groups of organism in Kingdom Animalia and

Plantae prefer this mode of reproduction. Give at least three reasons for this.

Ans. (a) Sexual reproduction brings about variation in the offspring.

(b) Since gamete formation is preceded by meiosis, genetic recombination occurring during crossing over (meiosis-I), lead to a great deal of variation in the DNA of gametes. (c) The organism has better chance of survival in a changing environment.