

**CBSE Test Paper 04**  
**Ch- 1 Reproduction in Organisms**

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1. Find the correct order of vegetative propoagules in potato, ginger Bryophyllum and water hyacinth
  - a. Leaf bud, eyes, rhizome and offset
  - b. Eyes, rhizome, leaf bud and offset
  - c. Rhizome, eyes, leaf bud and offset
  - d. Offset, leaf bud, offset and rhizome
2. Vegetatively propagated plants are generally
  - a. Genetically similar
  - b. Genetically dissimilar
  - c. Do not bear roots
  - d. Do not form buds
3. Pick out the monoecious plant from the following:
  - a. Date palm
  - b. Coccinia
  - c. Cucumber
  - d. Mulberry
4. An example of a dioecious plant is:
  - a. Castor beans
  - b. Date palm
  - c. Maize
  - d. Cucumber
5. Which of the following is not method of asexual reproduction
  - a. Conjugation
  - b. Grafting
  - c. Cutting
  - d. Budding
6. State the difference between meiocyte and gamete with respect to chromosome number.
7. Name the embryonic stage that gets implanted in the uterine wall of a human female.

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8. Name an organism where cell division is itself a mode of reproduction.
  9. Name any one animal in which self fertilization occurs.
  10. Off springs formed due to sexual reproduction have better chances of survival. Why?
  11.
    - a. The eggs of reptiles and birds are covered by calcareous shell. What is the technical term for that types of eggs?
    - b. Give any one example of monoecious and one example of dioecious plant.
  12. What are the three major phases in the life cycle of an organism? Define each phase.
  13.
    - a. State the difference between meiocyte and gamete with respect to chromosome number.
    - b. Why is a whiptail lizard referred to as parthenogenetic?
  14. Distinguish between asexual and sexual reproduction. Why is vegetative reproduction also considered as a type of asexual reproduction?
  15. Differentiate between external and internal fertilization.

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**Answer**

1. b. Eyes, rhizome, leaf bud and offset, **Explanation:** Potato tubers have eyes, ginger propagates through underground rhizome, Bryophyllum leaves have buds and water hyacinth propagates by offset stem. All these structures are mode of asexual reproduction
2. a. Genetically similar, **Explanation:** In vegetative propagation is the asexual mode of reproduction in which plants parts are used to grow new plants. Since fusion of gametes is not involved in the process all individual produced vegetatively are genetically similar.
3. c. Cucumber, **Explanation:** Cucumbers are monoecious plants which have separate male and female flowers on the same plant. The male flowers appear first and female flowers shortly later. The female flowers have small immature fruit at the base of the flower and male flower do not have any.
4. b. Date palm, **Explanation:** Date palm is dioecious because these plants bears exclusively either male flowers or female flowers.
5. a. Conjugation, **Explanation:** Conjugation is the mode of sexual reproduction in amoeba and some other Moneras. Cutting, grafting and budding are the mode of asexual reproduction without gametes formation.
6. In meiocyte, chromosome number is diploid ( $2n$ ) while in gamete, haploid ( $n$ ).
7. **Blastula Stage:** The blastula is a hollow sphere of cells, referred to as blastomeres, surrounding an inner fluid-filled cavity called the blastocoele formed during an early stage of embryonic development.
8. Amoeba (unicellular)
9. Taenia (tapeworm)
10. Sexual reproduction combines the characters of two parents and introduces variations which make the offsprings better in environment adaptation.

11.

- a. Cleidoic eggs are enclosed in a relatively impervious shell which reduces free exchange with the environment
- b.
  - Plants that have both staminate and pistillate flowers. Examples of monoecious plants are birch, hazelnut, oak, pine, spruce, corn, squashes and Coconut
  - A few examples of common dioecious landscape plants: yew, poplar, willow, ash, mulberry, holly, juniper, pepper trees, Pistache, pistachio, red maple, box elder, Podocarpus, aspen, currant, sumac, carob, Osage orange, sassafras, bay laurel and Date, palm

12. Juvenile phase, Reproductive phase, Senescent phase

Juvenile phase: The phase of growth in the organisms before reproductive maturity.

**Reproductive phase:** In this phase organisms attain reproductive maturity.

**Senescent phase:** The phase between reproductive maturity and death.

13. a. The meiocytes are the germ mother cells which have a diploid number of chromosomes (two-sets), undergo meiosis to form gametes (germ cells) which possess haploid (single sets) number of chromosomes.
- b. Whiptail lizard is referred to as parthenogenetic because it develops from an egg (female gamete) without the process of fertilization.

14.

Asexual reproduction	Sexual reproduction
1. It is always uniparental.	1. It is usually bi-parental.
2. There is no formation and fusion of gametes.	2. Formation and fusion of gametes takes place.
3. Only mitotic cell division takes place.	3. It involves both meiosis and mitosis.
4. Offspring are genetically identical to the parent.	4. Offspring genetically differ from the parent.

- Vegetative reproduction involves single parent and its offspring are genetically

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identical hence it is considered as a type of asexual reproduction.

**15. Differences between external and internal fertilization are :**

<b>External Fertilization</b>	<b>Internal Fertilization</b>
<ul style="list-style-type: none"><li>◦ The fusion of male and female gametes takes place outside the body of female in the aquatic medium.</li></ul>	<ul style="list-style-type: none"><li>◦ The fusion of male and female gametes takes place in the genital tract inside the body of the female.</li></ul>
<ul style="list-style-type: none"><li>◦ Both male and female gametes have to be released in the environment for their fusion.</li></ul>	<ul style="list-style-type: none"><li>◦ Only male gametes are motile thus released to mate with female gametes.</li></ul>
<ul style="list-style-type: none"><li>◦ The egg is either not covered by hard covering or if covered it has a hole called micropyle.</li></ul>	<ul style="list-style-type: none"><li>◦ The egg may or may not be covered with a hard covering.</li></ul>
<ul style="list-style-type: none"><li>◦ It occurs in oviparous animals e.g., Frog, Fish.</li></ul>	<ul style="list-style-type: none"><li>◦ It occurs in viviparous or ovoviviparous animals e.g., Mammals, Rattle Snake.</li></ul>
<ul style="list-style-type: none"><li>◦ Offsprings are more vulnerable to environmental conditions and predators.</li></ul>	<ul style="list-style-type: none"><li>◦ Offsprings are safer and have higher chances of survival.</li></ul>