



BIOLOGY

BOOKS - NCERT BIOLOGY (ENGLISH)

REPRODUCTION IN ORGANISMS

Multiple Choice Questions

1. A few statements describing certain features of reproduction are given below.

(i) Gametic fusion takes place.

(ii) Transfer of genetic material takes place.

(iii) Reduction division takes place.

(iv) Progeny have some resemblance with parents.

Select the options that are true for both asexual and sexual reproduction from the options given below.

A. I and II

B. II and III

C. II and IV

D. I and III

Answer: C



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2. The terms 'clone' cannot be applied to offspring formed by sexual reproduction because

A. offspring do not possess exact copies of parental DNA

B. DNA of only one parent is copied and passed on to the offspring

C. offspring are formed at different times

D. DNA of parent and offspring are completely different

Answer: A



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3. Amoeba and yeast reproduce asexually by fission and budding respectively, because they are

- A. microscopic organisms
- B. heterotrophic organisms
- C. unicellular organisms
- D. uninucleate organisms

Answer: C



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4. A few statements with regard to sexual reproduction are given below.

(i) Sexual reproduction does not always

require two individuals.

(ii) Sexual reproduction generally involves gametic fusion.

(iii) Meiosis never occurs during sexual reproduction.

(iv) External fertilisation is a rule during sexual reproduction.

Choose the correct statements from the option below.

A. I and IV

B. I and II

C. II and III

D. I and IV

Answer: C



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5. A multicellular, filamentous alga exhibits a type of sexual life cycle in which the meiotic division occurs after the formation of zygote. The adult filament of this alga has

A. haploid vegetative cells and diploid gametangia

B. diploid vegetative cells and diploid gametangia

C. diploid vegetative cells and haploid gametangia

D. haploid vegetative cells and haploid gametangia

Answer: D



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6. The male gametes of rice plant have 12 chromosomes in their nucleus. The chromosome number in the female gamete, zygote and the cells of the seedling will be, respectively

A. 12, 24, 12

B. 24, 12, 12

C. 12, 24, 24

D. 24, 12, 24

Answer: C



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7. Given below are a few statements related to external fertilisation. Choose the correct statements.

(i) The male and female gametes are formed and released simultaneously.

(ii) Only a few gametes are released into the medium.

(iii) Water is the medium in a majority of

organisms exhibiting external fertilisation.

(iv) Offspring formed as a result of external fertilisation have better chance of survival than those formed inside an organism.

A. III and IV

B. I and III

C. II and IV

D. I and IV

Answer: B



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8. The statements given below describe certain features that are observed in the pistil of flowers.

(i) Pistil may have many carpels.

(ii) Each carpel may have more than one ovule.

(iii) Each carpel has only one ovule.

(iv) Pistil have only one carpel.

A. I and II

B. I and III

C. II and IV

D. III and IV

Answer: A



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9. Which of the following situations correctly describe the similarity between an angiosperm egg and a human egg ?

(i) Eggs of both are formed only once in a lifetime.

(ii) Both the angiosperm egg and human egg

are stationary.

(iii) Both the angiosperm egg and human egg are motile transported.

(iv) Syngamy in both results in the option given below.

A. II and IV

B. only IV

C. III and IV

D. I and IV

Answer: B



10. Appearance of vegetative propagules from the nodes of plant such as sugarcane and ginger is mainly because

- A. nodes are shorter than internodes
- B. nodes have meristematic cells
- C. nodes are located near the soil
- D. nodes have non-photosynthetic cells

Answer: B



11. Which of the following statements, support the view that elaborate sexual reproductive process appeared much later in the organic evolution ?

(i) Lower groups of organisms have simpler body design.

(ii) Asexual reproduction is common in lower groups.

(iii) Asexual reproduction is common in higher groups of organisms.

(iv) The high incidence of sexual reproduction in angiosperms and vertebrates.

Choose the correct answer given below.

A. I and III

B. I and III

C. II and IV

D. II and III

Answer: C



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12. Offspring formed by sexual reproduction exhibit more variation than those formed by asexual reproduction because

A. sexual reproduction is a lengthy process

B. gametes of parents have qualitatively different genetic composition

C. genetic material comes from parents of two different species

D. greater amount of DNA is involved in sexual reproduction

Answer: B



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13. Choose the correct statement from amongst the following.

A. Dioecious (hermaphrodite) organisms

are seen only in animals

B. Dioecious organisms are seen only in

plants.

C. Dioecious organisms are seen in both plants and animals.

D. Dioecious organisms are seen only in vertebrates

Answer: C



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14. There is no natural death in single celled organisms like Amoeba and bacteria because

A. they can not reproduce sexually

B. they reproduce by binary fission

C. parental body is distributed among the offspring.

D. they are microscopic

Answer: C



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15. There are various types of reproduction.

The type of reproduction adopted by an organism depends on

A. the habitat and morphology of the organism

B. morphology of the organism

C. morphology and physiology of the organism

D. the organism's habitat, physiology and genetic makeup

Answer: D



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16. Identify the incorrect statement.

A. In asexual reproduction, the offspring produced are morphologically and genetically identical to the parent.

B. Zoospores are sexual reproductive structures.

C. In asexual reproduction, a single parent produces offspring with or without the formation of gametes.

D. Conidia are asexual structure in Penicillium.

Answer: B



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17. Which of the following is a post-fertilisation event in flowering plants ?

A. Transfer of pollen grains

B. Embryo development

C. Formation of flower

D. Formation of pollen grains

Answer: B



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18. The number of chromosomes in the shoot tip cells of a maize plant is 20. The number of chromosomes in the microspore mother cells of the same plant shall be

A. 20

B. 10

C. 40

D. 15

Answer: A



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Very Short Answer Type Questions

1. Mention two inherent characteristics of Amoeba and yeast that enable them to reproduce asexually



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2. Why do we refer to offspring formed by asexual method of reproduction as clones?



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3. Although potato tuber is an underground part, it is considered as a stem. Give two reasons.



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4. Between an annual and a perennial plant , which one has a shorter juvenile phase ? Give one reason.



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5. Rearrange the following events of sexual reproduction in the sequence in which they occur in a flowering plant embryogenesis, fertilisation, gametogenesis, pollination.



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6. The probability of fruit set in a self-pollinated bisexual flower of a plant is far greater than dioecious plant. Explain.





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7. Is the presence of large number of chromosomes in an organism a hindrance to sexual reproduction ? Justify your answer by giving suitable reasons.



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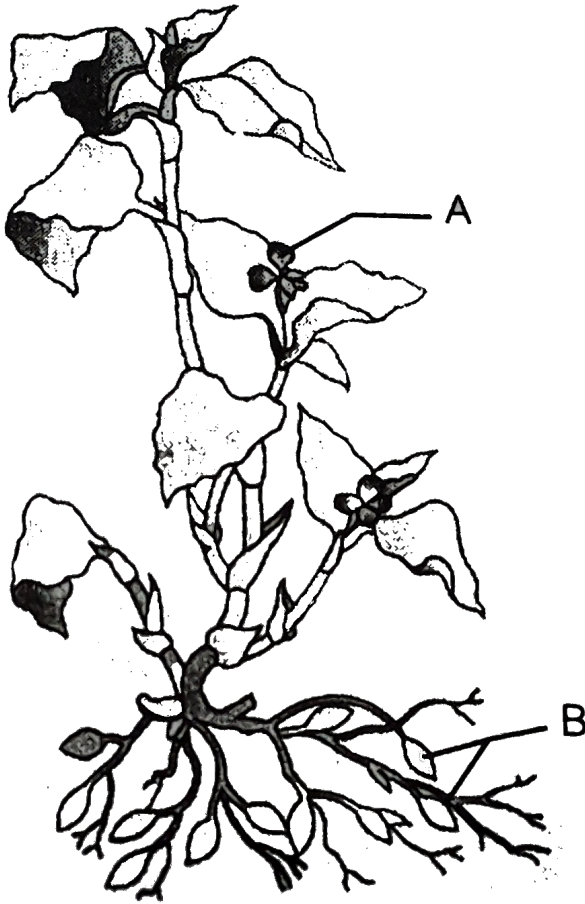
8. Is there a relationship between the size of an organism and its life span ? Give two examples support of your answer.



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9. In the figure given below the plant bears two different types of flowers marked 'A' and 'B'. Identify the types of flowers and state the

type of pollination that will occur in them.



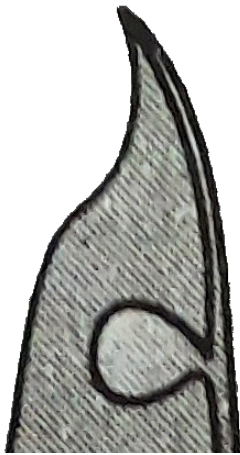
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10. Give reasons as to why cell division cannot be a type of reproduction in multicellular organisms.



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11. In the figure given below, mark the ovule and pericarp.





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12. Why do gametes are produced in large numbers in organisms exhibit external fertilisation ?



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13. Which of the following are monoecious and dioecious organisms ?

(a) Earthworm..... , (b) Chara

(c) Marchantia , (d) Cockroach



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14. Match the organisms given in column I with the vegetative propagules given in column II.

Column I	Column II
A. <i>Bryophyllum</i>	1. Offset
B. <i>Agave</i>	2. Eyes
C. Potato	3. Leaf buds
D. Water hyacinth	4. Bulbils



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15. What do the following parts of a flower develop into after fertilisation ?

(a) Ovary , (b) Ovules



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Short Answer Type Questions

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



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2. The number of taxa exhibiting asexual reproduction is drastically reduced in higher plants (angiosperms) and higher animals (vertebrates) as compared with lower groups of plants and animals. Analyse the possible reasons for this situation.



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3. Honeybees produce their young ones by sexual reproduction. In spite of this, in a colony of bees we find both haploid and diploid

individuals. Name the haploid and diploid individuals in the colony and analyse the reasons behind their formation.



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4. With which type of reproduction do we associate the reduction division? Analyse the reason for it.



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5. Is it possible to consider vegetative propagation observed in certain plants like Bryophyllum, water hyacinth, ginger, etc., as a type of asexual reproduction? Give two three reasons.



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6. Fertilisation is not an obligatory event for fruit production in certain plants'. Explain the statement.





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7. In a developing embryo, analyse the consequences if cell divisions are not followed by cell differentiation.



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8. List the changes observed in an angiosperm flower subsequent to pollination and fertilisation.



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9. Suggest a possible explanation why the seeds in a pea pod are arranged in a row, whereas those in tomato are scattered in the juicy pulp.



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10. Draw the sketch of a zoospore and a conidium. Mention two dissimilarities between

them and atleast one feature common to both structures.



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11. Justify the statement 'vegetative reproduction is also a type of asexual reproduction'.



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Long Answer Type Questions

1. Enumerate the differences between asexual and sexual reproduction. Describe the types of asexual reproduction exhibited by unicellular organisms.



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2. Do all the gametes formed from a parent organism have the same genetic composition (identical DNA copies of the parental genome)? Analyse the situation with the

background of gametogenesis and provide or give suitable explanation.



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3. Although sexual reproduction is a long drawn, energy-intensive complex form of reproduction, many groups of organisms in kingdom- Animalia and Plantae prefer this mode of reproduction. Give atleast three reasons for this.



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4. Differentiate between (a) oestrus and menstrual cycles, (b) ovipary and vivipary. Give an example for each type.



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5. Rose plants produce large, attractive bisexual flowers, but they seldom produce fruits. On the other hand a tomato plant produces plenty of fruits though they have

small flowers. Analyse the reasons for failure of fruit formation in rose.



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