

Reproduction

Asexual

(need one partner)

Sexual

(need two partners)

Fission

Regeneration

vegetative Propagation

Fragmentation

Budding

Spore Formation

Flower

Human

HOW DO ORGANISMS REPRODUCE?

Date

11-9-21

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Q12 MCQs

i) The flower of the Hibiscus plant is

Ans) Bisexual.

ii) The part of the flower which is present in the centre of the flower is

Ans) carpels.

iii) Reproduction is essential for living organisms in order to continue the species generation after generation.

iv) The male reproductive part of a flower, the stamens are collectively known as

Ans) Androecium.

Q2 Define the terms unisexual and bisexual giving one example of each.

Ans) Unisexual - An individual may be either male or female such organisms are called unisexual that i.e. they have only one sex in one individual. Some plants are also unisexual such as papaya, ascorbites.

Bisexual - But majority of flowering plants and animals like tapeworm, earthworm, garden snail, starfish etc are bisexual or hermaphrodites.

i.e. they have both male and female sex organs.

Q3) Draw a longitudinal section of a flower and label the following parts;

i) Part that produces pollen grains.

Ans) Anther

ii) Part that transfers male gametes to the female gametes

Ans) Pollen grains

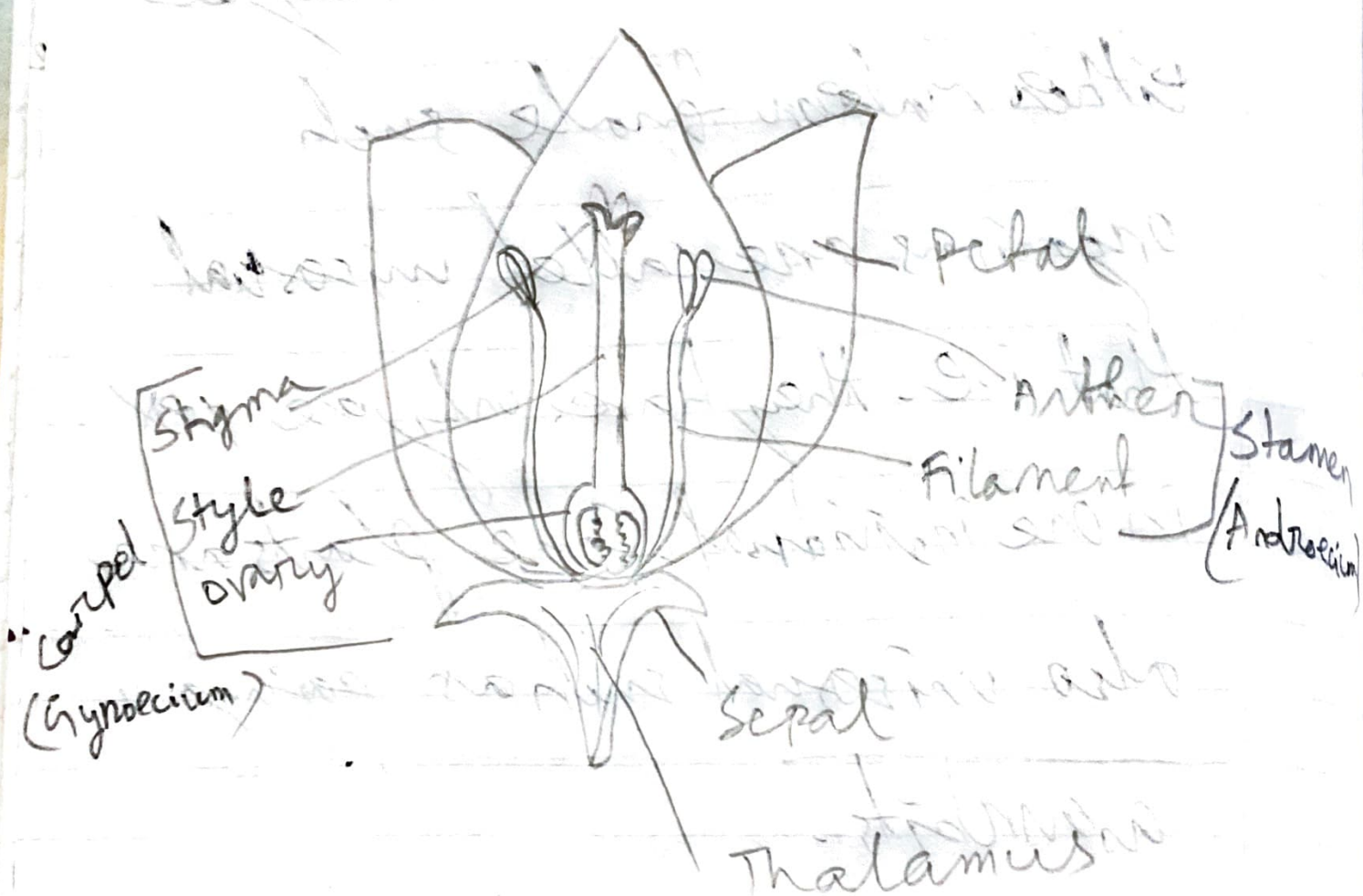
iii) Part that is sticky to trap the pollen grain - Stigma

iv) Part that develops into a fruit

Ans) Ovary

the parts of a flower

superior - hypogynous



epigynous - inferior

epigynous - inferior

epigynous - inferior

Q11) "Variations that confer an advantage to an individual organism only will survive in a population." Justify.

Ans) Populations of organisms normally live and interact with definite kinds of ecological niches. A population, therefore survives in a particular ecological surrounding. If there is an alteration in the ecological conditions of such places, the population of organisms will get damaged and may be wiped out. The variants of the organism, however have chances of

survival. The surviving individuals may reproduce and develop a kind of population which is suited to the changed niche. Thus, variation is beneficial to the species but not necessarily for the individuals.

Q2) Illustrate the following with the help of suitable diagrams:

i) Binary Fission in Amoeba

ii) Multiple Fission in Amoeba

Ans) Binary fission of the parent cell results in the formation of two small, nearly equal sized daughter individuals.

Multiple fission results in the formation of several daughter individuals.

Q3) What is reproduction? What are its two types? Which one of the two confers new characteristics on offsprings and how?

Ans) Reproduction is the production of new individuals of the same species produced by existing organisms. The two types of reproduction are: Asexual reproduction and sexual reproduction.

Sexual reproduction confers new characteristics on the ~~off~~ offspring due to variation in DNA copying.

Q9) Name the information source of making proteins in the cell. State two basic events in reproduction.

Ans) The information source of making proteins in cell is DNA.

Two basic events in reproduction are:

- This creates two copies of DNA in a reproducing cell.

- DNA copying is accompanied by the creation of an additional cellular

apparatus and then the DNA copies separate, each with its own cellular apparatus.

Q) Explain vegetative propagation with the help of two examples. List two advantages of vegetative propagation.

Ans) Vegetative propagation is the method of asexual reproduction in which new plants are produced from the vegetative parts of plant like stems, roots and leaves. Ex, Bryophyllum plant grows from its stem.

Advantages of vegetative propagation:-

- Plants grow faster by the process of vegetative propagation.

- ~~Plants grow~~ All plants produced are genetically similar to the parent plant.

3a) What is spore formation?

b) Draw a diagram showing spore formation in Rhizopus.

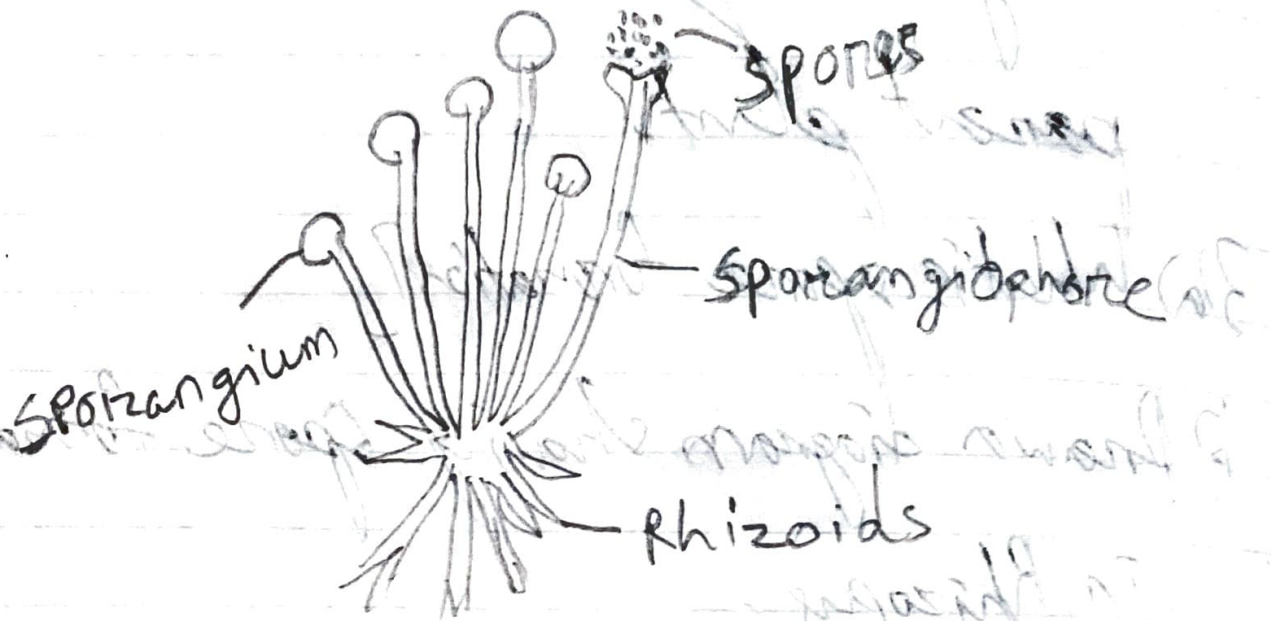
c) List two advantages for organisms to reproduce themselves through spores.

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Spore Formation in

Rhizopus

... ..



... ..

... ..

Ans) When a slice of bread is kept in most dark place for a few days, spores of *Rhizopus* present in air settle on the bread to form new fungus parts of *Rhizopus*.

Two advantages for organisms to reproduce themselves through spores are as follows:-

- It is a faster mode of reproduction.
- Offspring produced are identical.

4) How does binary fission differ from multiple fission?

Binary Fission

Multiple fission

Ans)

- | | |
|--|--|
| <ul style="list-style-type: none"> • In binary fission, the parent organism splits to form two new organisms. | <ul style="list-style-type: none"> • In multiple fission, the parent organism splits to form many new organisms at the same time. |
| <ul style="list-style-type: none"> • It takes place during favourable environmental conditions. | <ul style="list-style-type: none"> • It takes place during unfavourable unfavourable environmental conditions. |
| <ul style="list-style-type: none"> • Protective covering is not formed around the organism. | <ul style="list-style-type: none"> • Protective covering is formed around the organism during the multiple fission. |
| <ul style="list-style-type: none"> • Nucleus divides only once during this type of reproduction. | <ul style="list-style-type: none"> • Nucleus divides repeatedly to form large number of nuclei. |

Mah

Binary Fission

- It takes in Amoeba
Paramecium etc.

Multiple Fission

- It takes place in
Plasmodium

Q) How will an organism be benefited if it reproduces through spores?

Ans) Reproduction through spores gives several advantages to an organism.

Some of them are follows:-

- Spores can remain dormant till favourable conditions become available.
- Spores help an organism to tide over the bad phase.
- Spores can be spread through water, air, soil, animals and thus is good for the

spread of an organism to more places.

Q) Can you think of reasons why more complex organisms cannot give rise to new individuals through regeneration?

Ans) Complex multicellular organisms such as mammals cannot reveal regeneration, i.e., they can not give rise to ~~new~~ complete individuals from their cut body parts. It is so because in these ~~multicellular~~ multicellular organisms, most of the body cells have become specialised to form tissues & tissues

make up organs; organs together form organ system; and finally organ systems come together to form an organism.

Q) Why is vegetative propagation practiced for growing some types of plants?

Ans) It is a method of propagation in those plants which have lost their capacity to produce seeds or produce non-viable seeds.
(Ex: - Banana, seedless grapes, Rose, Pineapple, etc.)

Q) Why is DNA copying is essential part of the process of reproduction?

Ans) The process of reproduction results in the production of offsprings which are exactly similar to parents. The exact blue prints of body design is inherited in the offsprings due to DNA replication in parent cell. Thus, DNA copying is an essential part of the process of reproduction.

Mahar .

Human Reproductive System

Male

- Testes
- Scrotum
- vas Deferens
- Urethra
- penis

Female

- ovaries
- Fallopian Tubes
- Uterus
- vagina

Q7) Reproduction is one of the most important characteristics of living beings. Give three reasons in support of ~~your~~^{the} statement.

Ans) Reproduction is one of the most important characteristics of living beings due to following reasons:

- It helps in production of new individuals of its own kind.
- Continuity of life has been possible through reproduction.
- Genetic material is transferred from one generation to next by DNA copying as a ^{result} of reproduction.

1) Assertion: DNA copying is necessary during reproduction.

Reason: DNA copying leads to the transmission of characters from parents to offspring.

Ans) Both assertion and Reason are true and Reason is the correct explanation of assertion.

2) Assertion: Amoeba reproduces by binary fission.

Reason: All unicellular organisms reproduce ~~usually~~ asexually.

Ans) Both assertion and reason are true and reason is the correct explanation of assertion.

3) Assertion: Plasmodium reproduces by ^{multiple} ~~binary~~ fission.

Reason: Multiple fission is a type of asexual reproduction.

Ans) Both assertion and reason are true but reason is not the correct explanation of assertion.

4) Which of the following organisms do not depend on exchange genetic information.

Ans) Bacteria

5) By which method asexual reproduction occurs in Amoeba

Ans) Fission.

6) Difference between mitosis and meiosis -

Meiosis - Cellular division with

DNA replication

- Daughter cells are not identical due to crossing over -

- Results in 4 haploid (n) cells.

- Pair of chromosomes aligns along metaphase plate in random orientation (metaphase I)

Mitosis = Cellular division with DNA replication.

- Daughter cells are completely identical.

- Results in 2 diploid (2n) cells.

- Chromosomes align in single file along metaphase plate.

1) A Malegamete fuses with a female gamete, in generative fertilization.

2) In a ~~list~~ list of organisms gives below which is reproduced by asexual method? Baran and yeast.

3) Offsprings formed by asexual method of reproduction have greater similarity among themselves because asexual reproduction does not involve gametes.

4) The correct sequence of reproductive stages seen in flowering plants is

Gamete, zygote, Embryo, seedling

5) Which of the statements is incorrect

A) Androecium is a part of the carpel

B) The number of chromosomes present in parents and offspring of a particular species remains constant due to

A) Halving of chromosomes during gamete formation.

F) In rhizopus tubular structures bearing sporangia at their tips are called Hypphae.

- 8) Length of the pollen ~~grain~~^{tube} depends upon the distance between pollen grain on upper surface of stigma and ovule.
- 9) The ability of cell to divide into several cells during reproduction in plasmochium is called multiple fission.
- 10) Asexual reproduction takes place through budding in yeast.
- 11) The anther contains pollens.
- 12) The triploid nucleus formed is called endosperm.

13) Syngamy is =

Ans) Fusion of egg cell and male gamete in flowering plants.

14) Which of the following statements are true for flowers?

Ans. (b) They are sexual reproductive organ.

Ans) ~~Universal flower~~ After fertilization they give rise to fruit.

15) Which among the following statements are false for bisexual flowers?

Ans) They always possess stamens and pistil.

Short answer type:-

16) Why does the period of development of embryo's longer in case of multicellular organisms?

Ans) The period of development of embryo's longer in case of multicellular organisms because the multicellular organisms are more complex as they have many cells and reproduce mainly by sexual reproduction.

17) Draw a diagram of an embryo sac of plants.

Nahin
14.8.21

Embryo Sac

