HOW DO ORGANISMS REPRODUCE?

1. What is the importance of DNA copying in reproduction?

A. i) DNA has the information required for the cell divisions and for the inheritance of features.

ii) Cell division (mitosis) occurs after DNA copying (DNA replication).

iii) Cell divisions are essential for the production of gametes (meiosis) and for the development of new individual from the zygote (mitosis).

iv) Hence, DNA copying is essential in reproduction. (Or) The consistency of DNA copying during reproduction is important for the maintenance of body design features that allow the organism to use that particular niche.

2. Why is variation beneficial to the species but not necessarily for the individual?

A. i) Variation is beneficial to the species but not necessarily for the individual because sometimes variation in an individual may results in death of that individuals.

ii) For example, if there is population of certain bacteria living in normal climatic conditions and the temperature increases due to global warming, then most of the bacteria will not be able to tolerate excessive heat and hence die.

iii) But some bacteria which had variations to resist heat would survive and grow further.

iv) Hence, we can say that variation is beneficial to the species but not necessarily for the individual.

3. How does binary fission differ from multiple fission?

A.

BINARY FISSION	MULTIPLE FISSION
i) In this, parental cell divides and produces two daughter cells.	i) In this, a parental cell divides and produces more than two daughter cells.
ii) The parental nucleus divides into two daughter nuclei.	ii) The parental nucleus divides into many nuclei.
iii) It occurs during favorable conditions. Eg: Amoeba, Bacteria, etc.	iii) It occurs during unfavorable conditions. Eg: Plasmodium, Chlamydomonas etc.

4. How will an organism be benefited if it reproduces through spores?

A. i) Spores are light in weight and get distributed easily to distant places by wind. This helps to avoid competition at one place.

ii) Spores are produced in large numbers, so that large number of organisms are produced.

iii) Spores are covered by protective coat, so that they remain dormant till favourable conditions.

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

A. i) Regeneration is carried out by specialised cells.

ii) Complex organisms do not have specialised cells and they have highly differentiated tissues.

iii) Hence, they cannot give rise to new individuals through regeneration.

6. Why is vegetative propagation practiced for growing some types of plants?

A. **Vegetative propagation is practiced for growing some types of plants because:**

i) it is more rapid, easier and cheaper method.

ii) by this method good quality and variety of plants can be produced.

iii) it helps to introduce plants, in new areas where the seed germination fails to produce mature plant due to changes in environmental factors and the soil.

iv) it is used to grow a plant in which viable seeds are not formed or very few seeds are produced.

7. What could be the reasons for adopting contraceptive methods?

A. **Contraceptive methods are adopted to:**

i) prevent unwanted pregnancies.

ii) prevent population explosion.

iii) prevent sexually transmitted diseases.

iv) maintain personal reproductive health.

8. How is the process of pollination different from fertilization?

A.

POLLINATION	FERTILIZATION
i) It is the process of transfer of pollen grains from anther to stigma.	i) It is the process of fusion of male gamete with female gamete.
ii) It occurs in plants.	ii) It occurs in sexually reproducing organisms.
iii) It results in fertilization.	iii) It results in the formation of zygote.

9. What is the role of the seminal vesicles and the prostate gland?

A. **Seminal vesicles and prostate gland help in:**

i) secreting the nutritive fluids.

ii) transportation of sperms.

iii) providing nutrients to the sperms.

10. What are the changes seen in girls at the time of puberty?

A. i) Increase in breast size and darkening of skin of the nipples present at the tips of the breasts.

ii) Appearance of hair in the genital area.

iii) Appearance of hair in other areas of skin like underarms, hands and legs.

iv) Increase in the size of uterus and ovary.

v) Beginning of menstrual cycle.

vi) More secretion of oil from the skin, which results in the appearance of pimples.

11. How does the embryo get nourishment inside the mother's body?

A. i) The embryo gets nutrients from the mother's blood with the help of a special tissue called placenta.

ii) Placenta is a disc which is embedded in the uterine wall.

iii) It connects villi on the embryo's side of the tissue.

iv) On the mother's side are blood spaces, which surround the villi.

v) This provides a large surface area for glucose and oxygen to pass from the mother to the embryo.

12. If a woman is using a copper T, will it help in protecting her from sexually transmitted diseases?

A. No, using a copper-T will not provide a protection from sexually transmitted diseases.

13. Asexual reproduction takes place through budding in: **[b]**

a) Amoeba b) Yeast c) Plasmodium d) Leishmania

14. Which of the following is not a part of the female reproductive system in human beings?

a) Ovary b) Uterus [**c**]

c) Vas deferens d) Fallopian tube

15. The anther contains: **[d]**

a) sepals b) ovules c) carpel d) pollen grains

16. What are the advantages of sexual reproduction over asexual reproduction?

A. i) Sexual reproduction provides more chance for genetic variation.

ii) It plays an important role in origin of new species.

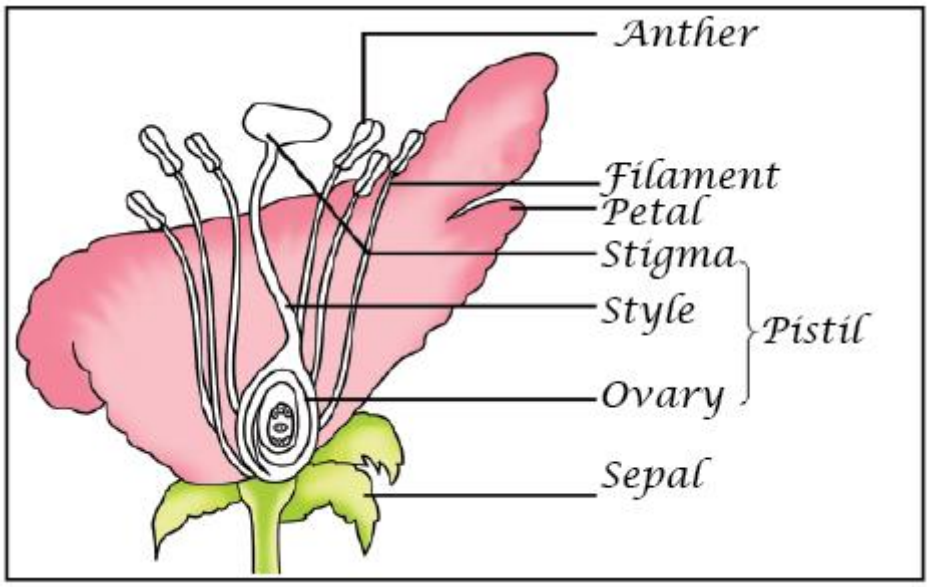
iii) It ensures the survival of species in a population.

17. Why does menstruation occur?

A. Menstruation occurs to break the lining of the uterus (gradually) so that it comes out through the vagina as blood and mucous. This happens if ovum is not fertilized.

18. Draw a labelled diagram of the longitudinal section of a flower.

A.



19. What are the different methods of contraception?

A. The contraceptive methods can be broadly divided into the following types:

i) **Natural method:** In this method, the sexual act is avoided from day 10 to 17 of the menstrual cycle because during this period, ovulation is expected and therefore, the chances of fertilization are very high.

ii) **Barrier method:** In this method, barriers (devices) are used to prevent the entry of sperms into female genital tract during sexual intercourse.

Eg : Condoms, diaphragm and cervical cap, copper-T or loop, etc.

iii) **Chemical method:** In this method, specific drugs are used by females to kill the sperms.

Eg : Vaginal pills, creams, jellies, etc.

iv) **Surgical method:** It includes vasectomy (blocking of vas deferens) in males, tubectomy (blocking of fallopian tubes) in females.

v) **Hormonal method:** In this, production of ovum is suppressed by changing the hormonal balance. Eg : Oral pills, i pill, etc.

20. How does reproduction help in providing stability to populations of species?

A. i) Reproduction plays role in producing the new individuals of the species that resembles the parents.

ii) Reproduction helps in continuation of the race.

iii) Reproduction replaces the individuals that are dead.

iv) Reproduction introduces new varieties.

v) Hence, reproduction helps in providing stability to populations of species.

21. How are the modes for reproduction different in unicellular and multicellular organisms?

A.

REPRODUCTION IN UNICELLULAR ORGANISMS	REPRODUCTION IN MULTICELLULAR ORGANISMS
i) Mode of reproduction is simple.	i) Mode of reproduction is complex.
ii) It involves the division of parental cells.	ii) It involves the formation of specialized cells.
iii) Mostly involves a single parent.	iii) Involves a single or two parents.
iv) Fertilization does not take place in most of the organisms.	iv) Fertilization process takes place.
Eg : Fission, budding, etc.	Eg : Vegetative propagation, sexual reproduction, etc.