

How do Organisms Reproduce?

Topic 2

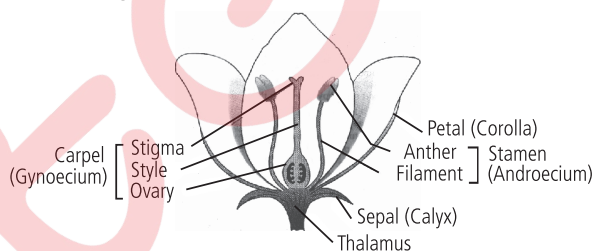
1. **(b)** : Budding is the most common method of asexual reproduction in yeast (a fungus *Saccharomyces*). It involves the production of a new individual from an outgrowth (called bud) of the parent individual. In *Amoeba*, *Plasmodium* and *Leishmania*, asexual reproduction occurs by fission.

Topic 3

1. **(c)** : Vas deferens is a part of the male reproductive system in human beings.
2. **(d)** : An anther is a part of stamen (male reproductive organ) of a flower. In most plants, anthers are bilobed and contain four pollen sacs. Haploid pollen grains are produced in these pollen sacs by the process of meiosis.
3. Sexual reproduction has the following advantages over asexual reproduction:
 - (i) Sexual reproduction involves fusion of male and female gametes coming respectively from male and female parents. Since the fusing gametes come from two different and sexually distinct individuals, the offspring exhibit diversity of characters.
 - (ii) Meiosis during gametogenesis provides opportunities for new combination of genes. It plays a prominent role in the origin of new species and leads to variations required for evolution.
4. Testes are the sites where male gametes, *i.e.*, sperms are made. The testes also secrete the male sex hormone-testosterone.
5. Menstruation is the process in which blood and mucus flow out through the vagina of a female. This process occurs every month because an egg is released from the ovary every month and at the same time, the uterus prepares itself to receive the fertilised egg. Thus, the

inner lining of the uterus gets thickened and is supplied with blood to nourish the embryo. However, in the absence of fertilisation, the lining of the uterus breaks down slowly and gets released through vagina as menstrual flow. Thus, menstruation occurs to release the thickened inner lining of the uterus which is not required anymore in the absence of fertilisation.

6. The longitudinal section of a flower is:



7. Unicellular organisms generally reproduce asexually by fission, budding and spore formation. They have only one celled body and can multiply easily by simple cell division. The multicellular organisms are more complex and reproduce mainly by sexual reproduction.
8. Reproduction is the only means to ensure the continuity of a species. By reproduction, organisms produce large number of new individuals out of which several get perished and only some survive. These surviving organisms replace the naturally dying members of the population. Hence the population as a whole is not affected and remains stable.

Topic 4

1. The different methods of contraception are :
 - (i) Barrier methods : These include the use of some physical devices to prevent the entry of sperm in the female genital tract. *E.g.*; Condoms are thin rubber sheaths used by man to cover the erect penis. Diaphragms are rubber/plastic covers used by woman to cover the cervix.
 - (ii) Chemical methods : These methods involve the use of chemical or hormonal preparations which act by preventing

the release of egg, by killing the sperms, by preventing fertilisation etc., e.g., use of oral pills (contraceptive pills) which prevent ovulation and hence fertilisation; use of vaginal pills which kill the sperms.

(iii) Intrauterine contraceptive devices (IUCDs) : IUCDs such as copper-T, progestasert etc, are placed in uterus by expert nurses or doctors to prevent implantation.

(iv) Natural methods : These methods include abstinence (avoiding copulation), rhythm method or safety period method (avoiding copulation at the time of ovulation), coitus interruptus (withdrawal of penis before ejaculation), etc.

(v) Surgical methods : These methods include vasectomy (in males) and tubectomy (in females), which block the transport of gametes and hence prevent fertilisation.

2. Contraceptive methods are adopted:

- (i) To avoid unwanted pregnancies.
 - (ii) To regulate the proper spacing between pregnancies.
 - (iii) To keep the population of a country under control.
 - (iv) To maintain a ratio between home economy and size of the family.
 - (v) To prevent the transfer of sexually transmitted diseases.
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