Std10th
3. Life processes in living organisms Part-II
Extra

- Answer in one sentence (1 m each)

Q. 1) What is reproduction ?

Ans :– The process by which creation of living organisms of the same kind helps to maintain the continuity of the species of that organism is called reproduction.

Q. 2) What is germination ?

Ans :– Germination is the process in plants where the zygotes develops at the cost of food stored in endosperm of seed forming a new plantlet.

Q. 3) What is sessile and pedicellate flowers?

Ans :– sessile flowers are those flowers without the stalk or pedicel and pedicellate flowers are those with the pedicels.

Q. 4) What are the components of semen?

Ans :– Semen consists of sperms embedded in secretion of prostate glands, seminal vesicles and Cowper's glands.

- Give the Names (1 M each)

Q. 5) Hormones related with male reproductive system.

Ans :– Follicle stimulating hormone and ICSH or luteinizing hormone secreted by pituitary gland, testosterone secreted by testis.

Q. 6) Hormones secreted by ovary of female reproductive system.

Ans :– Estrogen and progesterone

Q. 7) Types of twins.

Ans :– Monozygotic twins, Siamese twins and Dizygotic twins.

Q. 8) Any two sexual diseases

Ans :– Gonorrhoea and syphilis

Q. 9) Methods of family planning

Ans :– Copper T, condoms, oral contraceptive pills.

- Write the functions of following (1M each)

Q. 10) Calyx :

Ans :– Protection of inner whorls of the flower.

Q. 11) Corolla :

Ans :– Attracting insects for pollination. Protecting inner whorls.

Q. 12) Endosperm :

Ans :– Nourishment of growing embryo.

Q. 13) Testis :

Ans :– Production of sperms and male hormone testosterone.

Q. 14) Ovary :

Ans :– Production of sperms and male hormone testosterone.

Q. 15) Uterus :

Ans :– Growth and development of foetus during pregnancy. Helping in parturition (childbirth) by contractions.

- Answer the following questions (2M each)

Q. 16) What is regeneration ?

Or

Short note on regeneration

Ans :– In development life cycle of animals like lizard the process of regeneration is used to restore the lost part of animal like tail or limbs.

As the reproductive system is one of the full fledged system in the body, the process or regeneration cannot be called type of reproduction.

Q. 17) Which are the important life processes in living organisms?

Ans :– The important life processes in living organisms are respiration, circulation, nutrition, excretion, sensation, and response through nervous system.

Q. 18) Which life processes are essential for production of energy required by body?

Ans :– Respiration, circulation, and nutrition are the life processes that are essential for production of energy required by body.

Q. 19) Which are main types of cell division?

Ans :– The main types of cell division are mitosis and meiosis.

Q. 20) What is the role of chromosomes in cell division?

Ans :– Due to chromosomes, the DNA from parental cells enter into daughter cells. The hereditary characters are transmitted to next generation by cell division.

Q. 21) What do you mean by maintenance of species?

Ans :– Maintenance of species means a species undertakes successful reproduction and products individual of its own kind, so that the species existing on the earth.

Q. 22) What would have been happed if the male and female gametes had been diploid?

Ans :– Diploid (2n) gametes if united, they will form 4n. i.e. tetraploid variety. Such zygote will show severe abnormality. The chromosome number will not be maintained.

Q. 23) What would have been happened if any of the cells in nature had not been divided by meiosis?

Ans :– If meioisis does not happen the games produced, will diploid. This will create abnormality.

Q. 24) Which hormones are responsible for changes in human body occurring during onset of sexual maturity.

Ans :– Testosterone in male body and estrogen. In female body are responsible estrogen in female body are responsible for maturity onset changes in human body.

Q. 25) Why has the Government of India enacted the law to fix the minimum age of marriage as 18 in girls and 21 in boys?

Ans :– The full growth of female body is not completed till the age of 18. Till 18 years of age the physical and emotional maturity is not attained. Therefore, she is not suitable for marriage, sexual relationship, and pregnancy.

Similarly, boy attains complete growth only by the age of 21. Therefore, to keep individuals and their pregnancy safe and healthy the Government of India enacted the law to fix the minimum age of marriage as 18 in girls and 21 in boys.

Q. 26) Which hormone is released from pituitary of mother once the foetal development is completed?

Ans :– The hormone oxytocin is released from the posterior pituitary of mother once the foetal development is completed.

Q. 27) Under the effect of that hormone which organ of the female reproductive system starts to contract and thereby birth process (Parturition) is facilitated?

Ans :– Due to oxytocin uterus contracts involuntarily and the baby is expelled out. Thus initiation of birth process is possible due to contractions of uterus.

Q. 28) Absence of genetic recombination is an advantage whereas fast process is drawback of asexual reproductive method

Ans :– False (Absence of genetic recombination is a drawback whereas fast process is advantage of asexual reproductive method)

Q. 29) Any encysted Amoebo or any other protist is called ‘cyst’

Ans :– True (Cyst is the tough capsule like structure which keeps the protists dormant inside it. This helps the organisms to tide over unfavorable condition.

Q. 30) Pollen tube reaches the zygote via style

Ans :– False (pollen tube reaches the embryo sac via. Style.

Q. 31) There is glucose sugar in the semen.

Ans :– False (There is fructose sugar in the semen Glucose is not present in the semen)

Q. 32) During menstruation there is need of rest along with special personal hygiene.

Ans :– True (During phase of menstruation there is pain and bleeding in women. Her body is also susceptible for infections. There is weakness and hence she needs rest along with special personal hygiene)

Q. 33) Circulation Excretion, sensation, Reproduction

Ans :– Reproduction. (All others are processes necessary for survival of the individual)

Q. 34) Budding in hydra, Regeneration, binary fission, fragmentation

Ans :– Binary fission (All the others processes of asexual reproduction in multicellular organism)

Q. 35) Carrot, Radish, Potato, sweet potato

Ans :– Potato. (All others are edible roots)

Q. 36) Prostate gland Bartholin's gland cowper's gland, Epididymis.

Ans :– Bartholin's glands (All others are parts of male reproductive system)

Q. 37) Stigma, style pollen, ovary

Ans :– Pollen (All others are part of gynoecium)

Q. 38) Amoeba : Fission : : Hydra

Ans :– Budding

Q. 39) Transverse binary fission : paramecium : : Longitudinal binary fission :-

Ans :– Euglena

Q. 40) Calyx : sepals : : corolla : -

Ans :– Petals

Q. 41) Bisexual flower : Hibiscus : : Unisexual flower : -

Ans :– Papaya

Q. 42) FSH : Development of oocyte : : LH :-

Ans :– Ovulation.

- Distinguish between (Any 4 points) (2M each)

Q. 43) Asexual reproduction , sexual reproduction

Ans :–

Asexual reproduction	Sexual reproduction

1) Reproduction that occurs with the help of somatic cells is called as asexual	1) Reproduction that occurs due to fertilization of gametes is called sexual reproduction.
2) For asexual reproduction only one parent is necessary	2) Male and female parent are necessary for sexual reproduction
3) This reproduction occurs with the help of mitosis only.	3) This reproduction occurs with the help of both mitosis and meiosis
4) New individual formed by this method is genetically identical with parents	4) New individual formed by this method is genetically different from parents

Q. 44) Binary fission and multiple fission

Ans :–

Binary fission	**Multiple fission**
1) Two new individuals are formed from one old individual at one time.	1) Many new individuals are formed from one old individual at one time.

2) The division of nucleus and cytoplasm takes place initially	2) Only nucleus divides initially followed by division of cytoplasm.
3) The axis of division can be transverse longitudinal or any one axis as it is in simple binary fission	3) There is no axis for the fission
4) Binary fission can be done during favourable period.	4) Multiple fission takes place only at the time of unfavourable period.

Q. 45) Explain the concept of IVF (4M)

Ans :– 1) IVF means In vitro fertilization

2) IVF is the technique in the modern medical field where childless couples can be blessed by their own. Child.

3) IVF technique is used for childless coupes who are faced with problems such as less sperm count, obstacles, in oviduct etc.

4) The IVF technique is done by removing the oocyte from the mother and artificially fertilizing by the sperms which are collected from father.

5) The embryo formed is implanted in uterus of real mother or a surrogate mother or a surrogate mother at appropriate time.

Q. 46) What is menstrual cycle? Describe it in brief? (5M)

Ans :– **Menstrual Cycle:**

1) Female reproductive system undergoes some changes at puberty and those changes repeat at the interval of every 28 – 30 days. These repetitive changes are called as menstrual cycle.

2) Menstrual cycle is a natural process, controlled by four hormones.

3) Those four hormones are follicle stimulating hormone (FSH), luteinizing hormone (LH), estrogen and progesterone. One of the several follicles in the ovary starts to develop along with the oocyte present in it, under the effect of follicle stimulating hormone.

4) This developing follicle secretes estrogen.

5) Endometrium of the uterus starts to develop (during first cycle) or regenerate (during subsequent cycles) under the effect of estrogen.

6) Meanwhile, developing follicle completes its development.

7) It bursts under the effect of luteinizing hormone and oocyte is released. This is called as ovulation.

8) Remaining tissue of the burst follicle forms the corpus luteum.

9) Corpus luteum starts to secrete progesterone.

10) Endometrial glands secrete their secretion under the effect of progesterone.

11) Such endometrium is ready for implantation of embryo.

If oocyte is not fertilized within 24 hours, corpus luteum becomes inactive and transforms into corpus albicans.

12) Due to this, secretion of estrogen and progesterone stops completely. Endometrium starts to degenerate in absence of these two hormones. Tissues of degenerating endometrium and unfertilized ovum are discarded out through vagina. This is accompanied with continuous bleeding.

13) Bleeding continues approximately for five days. This is called as menstruation. Unless the oocyte is fertilized and embryo is implanted, this process is repeated every month. If the embryo is implanted, repetition of this cycle is temporarily stopped till the parturition and thereafter period of breast feeding.

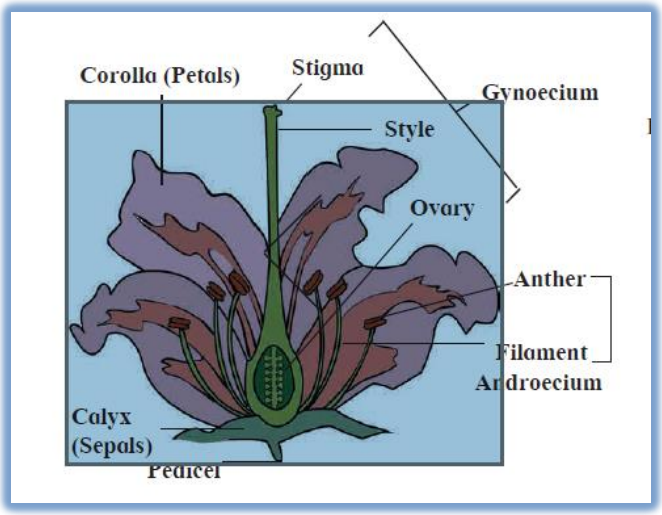
14) Menstrual cycle is a natural process and the women experience severe pains during this period. Severe weakness is felt due to heavy bleeding. There is higher possibility of infections too during this overall period.

15) Due to all such reasons, there is need of rest along with special personal hygiene.

- Sketch the labelled diagrams (4M)

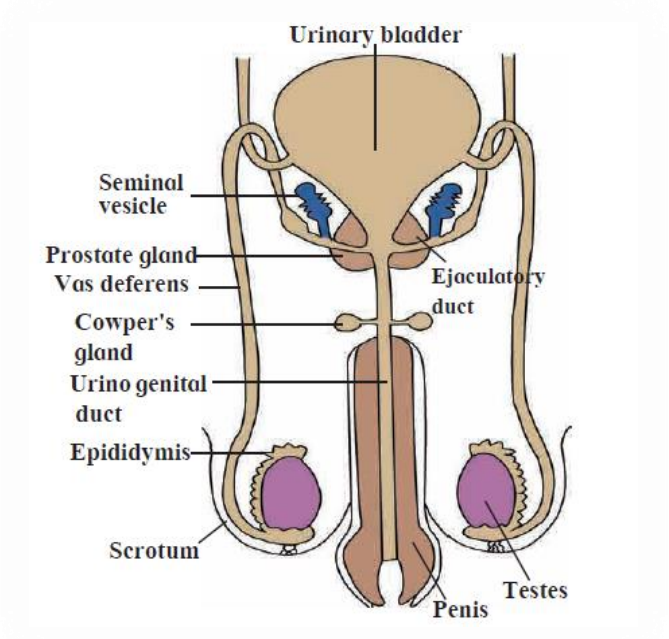
Q. 47) Flower with its sexual reproductive organs

Ans :–



Q. 48) Human male reproductive system (4M)

Ans :–



Q. 49) Explain sexual reproduction in plants. (5M)

Ans :– 1) Plants reproduce sexually with the help of flowers.

2) Androecium and gynoecium are male and female parts of the flowers respectively.

3) In the carper, the ovule undergoes meiosis and forms embryo sac.

4) A haploid egg cell and two haploid polar nuclei are present in each embryo sac.

5) The pollen grains from the on there reach the stigma of flower by the process of pollination. They germinate here on the stigma.

6) As a result of germination long pollen tube and two male gametes are formed.

7) The pollen tube travels through the style of pollen tube are transferred till the embryo sac in ovary upon reaching there, tip of the pollen tube bursts releasing two male gametes in embryo sac

8) One male gamete unites with the egg cell and forms zygote. While other male gamete unites with two polar nuclei forming the endosperm.

9) Because there are two nuclei participating in this process, therefore it is called double fertilization.

10) After fertilization ovule develops into seed and ovary forms a fruit. When the seed again gets favorable conditions, it can produce a new plant.

Q. 50) Explain sexual reproduction in plants. (1M)

Ans :– Both gametes i.e. sperm and ovum are formed by meiosis.

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