



FROM

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**ASCENT COACHING & SPOKEN ENGLISH POINT
cinema chowk PATORY (SAMASTIPUR)***How Do Organisms Reproduce?*

CLASS-X

S.A-II (Biology)

TIME- 3 hrsF.M-90

SECTION-A

V.short answer type = 1x3 =3 marks**Q1) Define fertilization.****Answer:** The process of fusion of two gametes (one male other feale) is called fertilization.**Q2) Define menarche.****Answer:** The commencement of menstruation at puberty is termed **menarche**, and it marks the beginning of reproductive life of a woman.**Q3) Out of the following plants which two plants are reproduced by vegetative propagation?**

jasmine, wheat, mustard, banana

Answer: jasmine, banana**Short answer type(I) questions 2x3 = 6 marks****Q4) Why does the lining of uterus become thick and spongy every month?****Answer:** To receive and nurture the growing embryo.**Q5) Define variation in relation to a species. Why is variation beneficial to the species?****Answer-** Variation means certain changes which occur in sexually reproducing organisms because of errors in DNA copying. Variations are beneficial for species because they give survival advantage even in the adverse environmental conditions.**Q6) What are the changes seen in girl's at the time of puberty?****Ans-**Various changes take place in girl's body at the time of puberty :

- a)Thick hair growth in the arm pit and genital area.
- b) Oily skin and appearance of pimples
- c) breast size begins to increase
- d) Girls begins to menstruates etc.

Short answer type(II) questions 3x12 =36 marks**Q7) What is the role of the seminal vesicles and the prostate gland?****Ans—Seminal vesicles:-**The secretion of seminal vesicles activates and nourishes the sperms.**Prostrate glands:-** The secretion of prostate gland contributes the motility and fertility of sperms.**Q8) (a) Give the function of: (i) Stigma (ii) Ovary**

(b) State in brief the formation of seed in a flower.

Answer:- (a) (i) **Stigma-** The sticky terminal part of the carpel is called **stigma**. It receives pollen.

(ii) **Ovary-** The swollen bottom part of the carpel is called **ovary**. It contains female germ cells which form seed after fertilization.

(b) After fertilization, the zygote divides several times to form an embryo within the ovule. The ovule develops a tough coat and is gradually converted into seed.

Q9) What is 'vegetative propagation'? Write two examples where it is used. State two reasons of practicing vegetative propagation for giving same types of plants.

Ans-Vegetative reproduction means production of new plants from the parts of the old plant like stem roots and leaves without the help of reproductive organs. **Ex:-** Banana, orange, rose, and jasmine

Reason of practicing vegetative propagation-

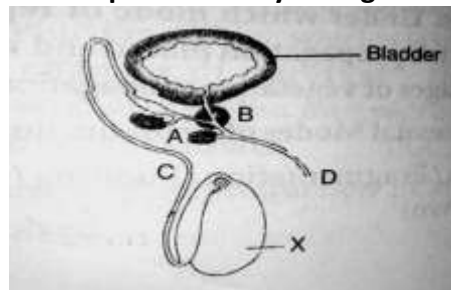
- It is cheaper, easier more rapid method of propagation.
- The traits of a parents plants are preserved by vegetative propagation and propagate seedless plants.

Q10) What is advantages of sexual reproduction over asexual reproduction?

Ans-a) Sexual reproduction plays a prominent role in evolution of new species whereas asexual reproduction does not.

b) Sexual reproduction provides opportunity for new combination of gens and thus causes genetic variation. This is not applicable by asexual reproduction.

Q11) In the diagram of human male reproductive system given below:



- Label parts A and B.
- Name the hormone produced by organ 'X'. What is the role of this hormone in human male?
- Mention the name of substances that are transported by tubes (i) C and (ii) D

Ans. (a) **A** – Seminal vesicle, **B** – Prostrate glands

(b) Testosterone. **Role:-** Controls gamete formation/ secondary sex organs/ accessory glands.

(c) **C** – sperms, **D** – sperms / semen and urine.

Q12) What happens if the ovum does not fertilized in female body?

Ans-when the ovum does not get fertilized it lives for one day. As the preparations of the uterine lining are not needed any more, the lining breaks and comes out along with the unfertilized ovum through the vaginal path in form of blood discharge. This is known as menstruation as it happens once in a month and it lasts for 2-8 days.

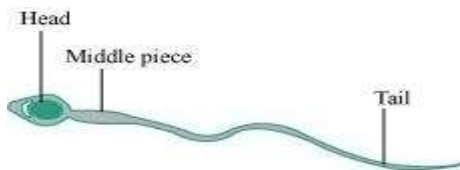
Q13) Differentiate between grafting and layering.

Answer

-	Grafting	-	Layering
(i)	In this method, a stem cutting from the desired plant is placed on a rooted plant and is bound firmly by tape.	(i)	In this method, the branch of a plant is bent and covered with moist soil, called mound.
(ii)	The resultant plant has the characteristics of both the parents.	(ii)	The resultant plant is identical to the parent plant.
(iii)	Favourable characteristics can be incorporated by this method.	(iii)	Favourable characteristics cannot be incorporated by this method.
	Example: rose, mango		Example: jasmine, strawberry

Q14) Explain the structure of sperm.

Answer



Sperm consists of a head, a middle piece and a tail. The head has a nucleus containing the chromosomal material. The middle piece has numerous mitochondria which provide energy to the moving sperm. The tail facilitates the movement of sperm into the female body.

Q15) What is fragmentation? Name a multicellular organism which reproduces by this method.

Ans- Fragmentation is a asexual method of reproduction in which an organism simply breaks up into smaller pieces upon maturation. These pieces or fragments grow into new individuals.

Spirogyra is the multicellular organism with relatively simple body organization which reproduces through this simple method of reproduction, i.e, fragmentation.

Q.16) Arjun and Ram are students of Class- X. Both were initially good in studies. After some time academic performance of Arjun started declining and he became irritable. This change was noticed by his class teacher the teacher, while interacting with Arjun found out that he had six siblings and whole family lived in a single room.

Mother was not able to devote much attention to him and resources were not sufficient.

(i) After going through the situation, what are the factors, which you think, are responsible for change in behaviour and his poor performance in studies.

Ans: Big families can be one of the reasons/advantages of having short family.

Associated Value : The learner will understand the fact that only small family gets good health and education unlike that of a large family.

Q.17) . Describe sexually transmitted diseases (STDs) and mention the ways to prevent them.

Ans: Those infectious diseases which are spread by sexual contact called sexually transmitted diseases (STDs)

Methods for prevention of STDs

- The people should be educated about various STDs
- Extra – marital relations should be avoided
- Sex without proper precaution should be avoided
- High standard of moral education should be give to the people.

Q.18 State in brief the functions of the following parts of the human female and male reproductive system:

(i) Ovary (ii) Fallopian Tube (iii) Uterus (iv) Scrotum (v) Testes (vi) Vas deferens

ANS:(i) Ovary- Production of ova and sex hormones

(ii) Fallopian tube - Site of fertilization

(iii) Uterus – Keeps the foetus till complete development

(iv) Scrotum – Protects testes outside abdominal cavity.

(v) Testes – Produces male gametes called sperms

(vi) Vas deferens – Delivers sperm from testes to urethra.

Long answer type questions 5 x 6 = 30 marks

Q.19 (a) Identify the organisms A , B and the mode of asexual reproduction exhibited by them.

(b) How will an organism be benefitted if it reproduces through spores?

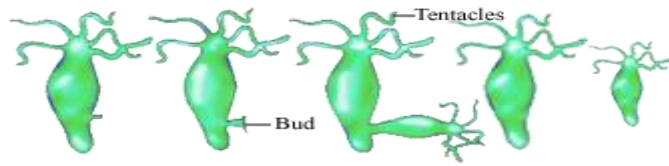
(c)Mention the two asexual methods by which hydra can reproduce. Explain briefly such methods.



Answer: (a) (A) Bryophyllum – vegetative propagation (B) Plasmodium – Multiple fission

(b) Spores are covered with thick walls that protect them until they come into a moist surface.

(c) Budding and Regeneration



Ans-Budding:- Hydra reproduces by budding using the regenerative cells. A bud develops as a outgrowth in hydra due to repeated cell division of specific site, when full mature, the bud detaches from the parent's body and develop into new individuals

Regeneration:- Specialized cells divide to form large number of cells-undergo changes to become various cells types and tissues.

Q20 (a) List two reasons for avoiding frequent pregnancies by women.

(b) Explain in brief the following method of contraception giving one example of each.

(i) Barrier method (ii) Chemical method (iii) Surgical method.

OR

(a) Draw longitudinal section of a flower to show its male and female reproductive parts.

Label the following on it. (i) Ovary (ii) Anther (iii) Filament (iv) Stigma

(b) Distinguish between self-pollination and cross-pollination. (c) How does fusion of male and female gametes take place in plants?

Ans:- (a) 1. It has adverse effect on the health of women.
2. It increases the rate of the population of our country.

(b) (i) Barrier method -In this method , a device is used to prevent the entry of sperms in the female genital tract during sexual intercourse.

Example : Condom, diaphragm and cervical cap.

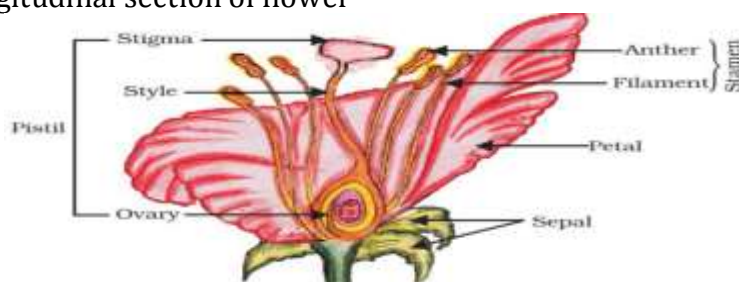
(ii) Chemical method - It involves the use of specific drugs by females.

Example: Oral pills, vaginal pills, OC.

(iii) Surgical method - surgical removal or ligation of vas deferens in males and the fallopian tube in females there by preventing production of male and female gametes.

OR

(a) longitudinal section of flower



(b) (i) Self-pollination is the transfer of pollen grains from anthers flower to the stigma of the same flower or another flower of the same plant.

(ii) Occurs in bi sexual flowers.

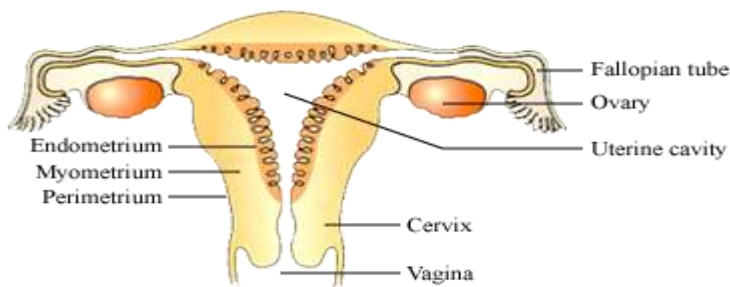
(i) Cross pollination is the transfer of pollen grains from anthers to the stigma of another flower borne on another plant of the same species.

(ii) Occurs in unisexual flowers as well as bi sexual flowers.

(c) The pollen tube which carries male gamete, travels through the style to reach the ovary. The ovary contains ovules. Each ovule has an egg cell. The fusion of male gamete and female gamete, called fertilization, gives rise to the zygote. The zygote is capable of growing into a new plant.

Q21) Draw a labelled diagram to explain the female Reproductive system.

Ans:- Female reproductive system:-It consists of a pair of ovaries, a pair of oviducts, uterus, and vagina.



The ovaries are located on each side of the lower abdomen. It produces thousands of eggs in the female body. It also produces a hormone called **oestrogen**, which brings about secondary sex characteristics in the female body.

The eggs produced in the ovary start maturing on reaching puberty. One egg from each ovary grows and matures, and is carried from the ovary to the **uterus** by a thin **oviduct** or the **fallopian tube**. Sperms from the male reproductive system enter the body of the female through the **vagina**

Q22) Describe the changes taking place in female reproductive organs every month Or What will happen if ovum is not fertilized? Describe the events in a sequence wise manner.

5 marks

Ans-Cyclic changes taking place in the reproductive organs of non pregnant women are termed as menstrual cycle. They take place if the ovum is not fertilized .Important events in sexual cycle of females:

Ovulation -Release of mature ovum from the ovary.

Menstruation -Degeneration and removal of inner thickened lining of uterus along with blood after every 28 days, through the vaginal canal Both these events stop if pregnancy occurs and are resumed after the child birth: If fertilization does not occur, both the processes keep occurring periodically every month.

Q23) Describe any four different methods of contraception.

Ans. The different methods of controlling the child birth are –

(1) Hormonal methods: Various kinds of pills containing hormones which prevent the release of egg from the ovary, without interfering with other phases of menstrual cycle, are taken orally.

(2) Barrier method: These are the physical and chemical barriers which prevent the sperms meeting the egg. Physical devices such as condoms, diaphragms and cervical caps are used.

(3) Intra Uterine Devices: Commonly called as I.U.Ds, they are the devices made of plastics and come in different shapes. The most commonly among these is copper- 'T'. These devices are placed inside the uterine cavity and permanently kept there. It prevents the implantation in the uterus.

(4) Surgical methods. The surgical methods are safe and permanent.

(i) Vasectomy. In this operation, a small piece of vas deferens is cut and removed and the two ends of the cut vas deferens are tied.

(ii) Tubectomy. In this operation, fallopian tubes are cut, tied with nylon thread to close the passage, which prevents the passage of eggs

Q24) Diagrammatical represent how are spores produced in sporangium of Rhizopus?

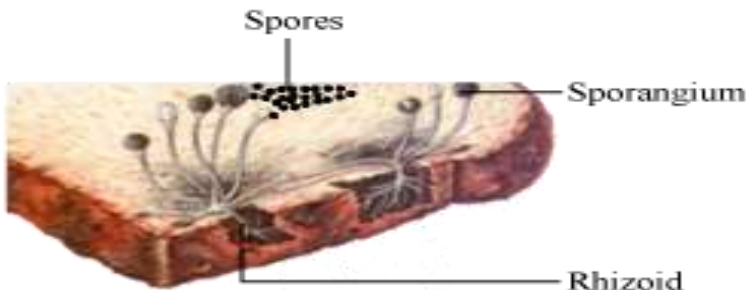
Ans:- a) A spore is a small microscopic structure with a thick wall.

5 marks

b) Spores are generally formed in a structure called sporangium which reassembles formed in a structure called sporangium which resemble blob on – a – stick.

c) Sporangia are formed at the tip of erect fungal hyphae.

d) In each sporangium, a nucleus



divides several times producing a large number of nuclei. Nuclei get surrounded by a little cytoplasm and develop into thick – walled cells or spores.

e) The wall of sporangium breaks to release the spores in air.

f) On germination in the presence of moist surface, each spore gives rise to a new organism.

SECTION-B

(Practical based question = 9x1 = 9 marks)

Q25) Condom is a method of birth control that falls under the following category:

- (a) Surgical Method (b) Hormonal Method **(c) Mechanical method** (d) Chemical Method

Q26) The common passage for sperms and urine in the male reproductive system is:

- (a) Ureter (b) Seminal Vesicle **(c) Urethra** (d) Vas deferens

Q27) In sperm, mitochondria occurs at

- (a) In acrosome (b) In tail (c) In head **(d) In middle piece**

Q28) In general a fruit is

- (a) a thickened style. (b) an enlarged ovule. **(c) a mature ovary.** (d) a modified root

Q29) Mature sperms are stored in

- (a) epididymis** (b) vas deferens (c) seminiferous (d) seminal vesicles

Q30) In human males, all the chromosomes are paired perfectly except one. This/these unpaired chromosomes is/are:

- I. Large chromosome II. Small chromosome III. Y-chromosome IV. X-chromosome

The correct option is:

- (a) I and II (b) Only III **(c) III and IV** (d) II and IV

Q31) The testes perform the following function/functions:

- (a) Produce testosterone (b) Produce sperms **(c) Produce male gametes and hormone**
(d) Produce sperms and urine

Q32) Plants that have lost their capacity to produce seeds, reproduce by

- (a) Spores **(b) Vegetative propagation** (c) Fission (d) Regeneration

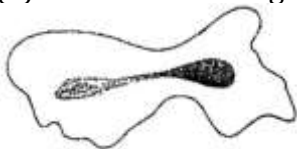
Q33) A common feature of reproduction in Amoeba, spirogyra and yeast is that

- a) They reproduce only sexually b) They are all unicellular
c) they reproduce asexually d) They are all multicellular

Practical based question = 3x2 =6 mark

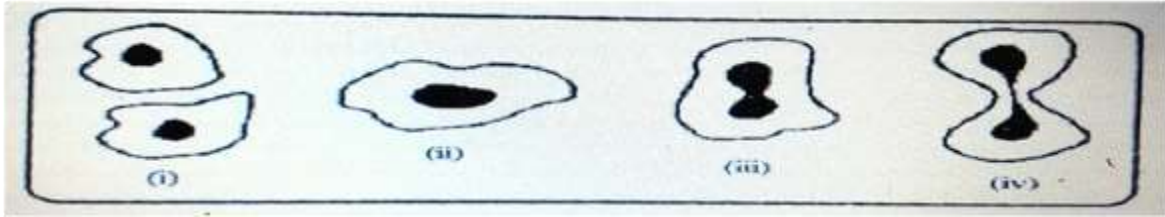
Q34) The diagram given below illustrates

- (a) bud formation in yeast (b) binary fission in Amoeba.
(c) formation of daughter cells in yeast. (d) pseudopodia formation in amoeba



Q35) The figures given below illustrate binary fission in Amoeba but the steps are not in proper sequence.

The correct sequence of the process is:



(a) IV, II, I, III

(b) II, III, IV, I

(c) IV, I, II, III

(d) II, I, IV, III

Q.36) When slides of binary fission in amoeba and budding in yeast are seen, what kind of observations a student can make from these slides?

Answer:- (i) Single cell of amoeba and single cell of yeast can be seen undergoing binary fission and budding respectively.

(ii) Elongated nucleus dividing to form two daughter nuclei can be seen in amoeba.

(iii) A chain of buds can be seen in few cells of yeast.