



<b>CLASS: X</b>	<b>DEPARTMENT: SCIENCE</b> <b>2023 - 2024</b>	<b>DATE: 13.10.23</b>
<b>WORKSHEET:2</b>	<b>TOPIC: HOW DO ORGANISMS REPRODUCE?</b> <b>(SEXUAL REPRODUCTION)</b>	<b>NOTE: A4 FILE</b> <b>FORMAT</b>
<b>NAME OF THE</b> <b>STUDENT:</b>	<b>CLASS &amp; SEC:</b>	<b>ROLL NO.</b>

**I. OBJECTIVE TYPE QUESTIONS:**

1. After a female attains puberty, the body undergoes many changes for maturation. Which event will likely happen in the female body when there is no fertilization of egg?
  - (a) disintegration of uterine wall
  - (b) development of egg into zygote
  - (c) increase in the production of eggs in the ovaries
  - (d) of a mature egg into an immature egg
2. Unisexual flowers contain:
  - (a) both stamen and carpel
  - (b) only stamen
  - (c) only carpel
  - (d) either stamen or carpel.
3. D N A copying is necessary during reproduction because:
  - (a) it leads to the transmission of characters from parents to off springs
  - (b) it leads to variation
  - (c) it helps in survival of the species over time
  - (d) all of these.
4. Which of the following is a sexually transmitted viral disease?
  - (i) Gonorrhoea
  - (ii) Syphilis
  - (iii) Warts
  - (iv) HIV-AIDS
  - (a) (i), (iii) and (iv)
  - (b) (ii) and (iv)
  - (c) (iii) and (iv)
  - (d) (i) and (ii)
5. Which of the following is the correct sequence regarding sexual reproduction in a flowering plant?
  - (a) Pollination, fertilisation, seedling, embryo

- (b) Seedling, embryo, fertilisation, pollination
- (c) Pollination, fertilisation, embryo, seedling
- (d) Embryo, seedling, pollination, fertilisation

6. The process of release of eggs from the ovary is called:

- (a) menstruation
- (b) reproduction
- (c) insemination
- (d) ovulation

7. Along the path of the vas-deferens the secretions of which gland provide nutrition to the sperms?

- (a) Prostate glands
- (b) Seminal vesicles
- (c) Scrotum
- (d) Urinary bladder

8. The embryo in humans gets nutrition from the mother's blood with the help of a special tissue called:

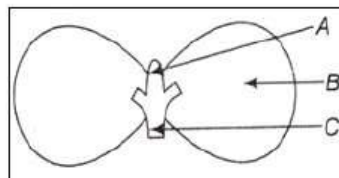
- (a) Placenta
- (b) Villi
- (c) Uterus
- (d) Womb

9. In human males, the testes lie in the scrotum, because it helps in the:

- (a) secretion of fluid
- (b) formation of sperms
- (c) easy transfer of gametes
- (d) secretion of estrogen

10. In the below figure, parts A, B and C are:

- (a) Cotyledon, plumule and radicle
- (b) Plumule, radicle and cotyledon
- (c) Plumule, cotyledon and radicle
- (d) Radicle, cotyledon and plumule



11. The correct sequence of organs in the male reproductive system for the transport of sperm is:

- (a) Testis → vas deferens → urethra
- (b) Testis → ureter → urethra
- (c) Testis → urethra → ureter
- (d) Testis → vas deferens → ureter

For the following questions, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii), and (iv) as given below.

- i) Both A and R are true and R is the correct explanation of the assertion.
- ii) Both A and R are true but R is not the correct explanation of the assertion.
- iii) A is true but R is false.
- iv) A is false but R is true

12. Assertion: Male gametes are motile.  
Reason: They are living diploid cells.

13. Assertion: One pollen mother form four microspores.  
Reason: Microspores are formed due to reduction division.

14. Assertion: At puberty, in boys, voice begins to crack and thick hair grows on their face.  
Reason: At puberty, there is a decreased secretion of testosterone in boys.

15. Assertion: Surgical methods are the most effective methods of contraception.  
Reason: Surgical method blocks the transport of gametes and hence prevents fertilisation.

## **II. VERY SHORT ANSWER (2M):**

16. a) Why is fertilisation in flowering plants not possible without pollination?  
b) Name the parts of a bisexual flower that are not directly involved in reproduction.

17. a) Name the parts in human body where sperms and eggs are produced.  
b) Why copper - T cannot protect a woman from sexually transmitted diseases?

18. Give reasons for the following:  
a) Oral pills help in birth control.  
b) Petals of flowers are variously coloured.

19. List two common signs of sexual maturation in boys and girls.

20. Mention the name of two plants each having unisexual and bisexual flowers.

21. List the reasons for adopting contraceptive methods.

22. a) Trace the path a male gamete takes to fertilise a female gamete after being released from the penis.  
b) State the number of sets of chromosomes present in a zygote.

## **III. SHORT ANSWER TYPE QUESTIONS: (3M)**

23. What changes occur in the flower after fertilisation?

24. List three differences between pollination and fertilisation.

25. List two functions each of the following parts of human female reproductive system.  
a) Ovaries

- b) Fallopian tubes
- c) Uterus

26. a) Why has Government of India prohibited prenatal sex determination by law? State its benefits in the long run.  
 b) Unsafe sexual act can lead to various infections. Name two bacterial and two viral infections caused due to unsafe sex.

27 Explain the following methods of contraception giving one example of each.

- a) Barrier method
- b) Chemical method
- c) Surgical method

28. What does HIV stand for? Is AIDS an infectious disease? List any four modes of spreading AIDS.

**IV. LONG ANSWER TYPE QUESTIONS (5 M):**

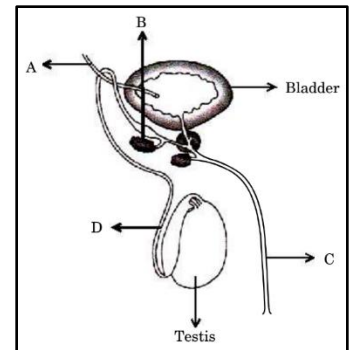
- 29.a) Draw a diagram showing germination of pollen on stigma of a flower. Label pollen grain, male germ cells, pollen tube and female germ-cell in the above diagram.  
 b) Differentiate between self-pollination and cross-pollination.

30. a) What is placenta? Explain its function in humans  
 b) What happens to the lining of uterus:  
 (i) before release of a fertilised egg?  
 (ii) if no fertilisation occurs?

**V. BOARD BASED QUESTIONS:**

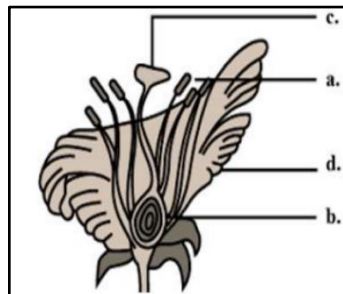
31. Based on the given diagram answer the questions given below:

- a) Label the parts A, B, C and D.
- b) Name the hormone secreted by testis and mention its role.
- c) State the functions of B and C in the process of reproduction.



32. (a) In the given diagram name the parts where:

- (i) pollen grains produced, and
- (ii) pollen grains are transferred



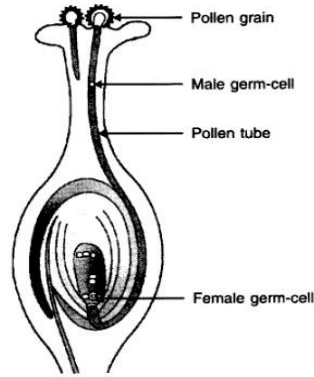
33. What is sexual reproduction? List its significances.

<b>ANSWERS</b>	
1.	(a) disintegration of uterine wall
2.	(d) either stamen or carpel.
3.	(d) all of these.
4.	(c) (iii) and (iv)
5.	(c) Pollination, fertilisation, embryo, seedling
6.	(d) ovulation
7.	(b) Seminal vesicles
8.	(a) Placenta
9.	(b) formation of sperms
10.	(c) Plumule, cotyledon and radicle
11.	(a) Testis → vas deferens → urethra
12.	iii) A is true but R is false
13.	i) Both A and R are true and R is the correct explanation of the assertion.
14.	iii) A is true but R is false.
15.	i) Both A and R are true and R is the correct explanation of the assertion.
<b><u>II. VERY SHORT ANSWER (2M):</u></b>	
16.	a) Fertilisation requires bringing of male gametes to the female gamete which is possible only when pollen grain is brought from the anther to the stigma in the process of pollination. b) Sepals and petals are not involved in reproduction.
17.	a) The egg is produced by ovaries in humans, whereas sperms are produced by testes in humans. Testes generally produce approximately millions of sperms and ovaries produce a single egg in a month. b) Copper-T is an intra-uterine device which does not allow fertilisation to take place. As it does not provide any barrier against mixing of body fluids from two individuals, therefore, it acts only as a contraceptive method but does provide protection against STDs.
18.	a) Contraceptive pills (birth control pills) are oestrogen medications that are taken orally. They prevent pregnancy by delaying ovulation and sperm from passing through the cervix. b) Flowers are scented and have bright coloured petals, because of which insects attract towards them and help in the transfer of pollen grains from one flower to another flower.
19.	-Growth of pubic hair and extra hair in the armpits. -Development of oily skin and pimples.
20.	The flower may be unisexual (papaya, watermelon) when it contains either stamens or pistil or bisexual (Hibiscus, mustard) when it contains both stamens and pistil.
21.	Reasons to adopt contraceptive methods are: 1. Contraception <b>prevents unwanted pregnancies</b> . 2. Using contraception aids in better <b>family planning</b> and takes into account the parents' readiness to have a child.

	<p>3. Using physical barriers such as condoms drastically <b>reduces</b> the risk of getting a <b>Sexually Transmitted Disease (STD)</b>.</p> <p>4. Using contraceptive methods can help in controlling the birth rate.</p>
22.	<p>a) Male gamete (sperm) travels in the female reproductive tract after being released. The path which it takes to fertilise the female gamete (egg) is vagina, uterus, fallopian tube where it fuses with the egg cell resulting in the formation of a zygote.</p> <p>b) Zygote has 2 sets of chromosomes.</p>
	<b><u>III. SHORT ANSWER TYPE QUESTIONS: (3M)</u></b>
23.	<p>After fertilisation:</p> <ul style="list-style-type: none"> <li>- The sepals and the petals dry up.</li> <li>- The ovary converts into fruit.</li> <li>- The ovule forms the seed.</li> <li>- The zygote forms the embryo which is enclosed in the seed.</li> </ul>
24.	<p>Pollination</p> <ul style="list-style-type: none"> <li>-Pollination is the transfer of pollen grains from anther to stigma.</li> <li>-Pollination results in fertilisation.</li> <li>-It is an external process.</li> </ul> <p>Fertilisation</p> <ul style="list-style-type: none"> <li>-Fertilisation is the fusion male and female gametes.</li> <li>-Fertilisation results in the production of seed and the development of the embryo within it.</li> <li>-It is an internal process.</li> </ul>
25.	<p>Ovary:</p> <ul style="list-style-type: none"> <li>-It is the female sex organ that releases egg every month.</li> <li>-It also produces some hormones such as oestrogen and progesterone.</li> </ul> <p>Fallopian tube/Oviduct:</p> <ul style="list-style-type: none"> <li>-The fertilisation takes place in the oviduct.</li> <li>-The egg is carried to the uterus through the fallopian tube or oviduct.</li> </ul> <p>Uterus:</p> <ul style="list-style-type: none"> <li>-Uterus helps in the implantation and in the growth of the embryo into the foetus.</li> <li>-It provides nutrients to the growing embryo through the placenta.</li> </ul>
26.	<p>a) 1. Indiscriminate female foeticide and desire for a male child. 2. Declining female – male sex ratio.</p> <p>b) STD caused by bacteria are -: Gonorrhoea and Syphilis STD caused by virus are -: Warts and AIDS (Acquired Immune Deficiency Syndrome)</p>
27.	<p>Methods of contraception</p> <p>(i)Barrier method - Condom/ Diaphragm, to prevent the meeting of sperms and ova.</p> <p>(ii) Chemical method - Oral pills: Changes the hormonal balance of the female partner so that the eggs are not released.</p> <p>(iii) <b>Surgical method:</b> In this method a small portion of vas deferens in male and the fallopian tube in female is surgically removed or tied. It is called VASECTOMY in males and TUBECTOMY in females.</p>
28.	Human immunodeficiency viruses, Yes, contaminated needles, sexual contact, drugs, blood transfusion,
	<b><u>IV. LONG ANSWER TYPE QUESTIONS (5 M):</u></b>

29.

a)



b)

Self-Pollination	Cross Pollination
The pollen grains from a flower are carried to the stigma of the same flower	The pollen grains from a flower are carried to the stigma of the different flower on other plant.
Such flowers do not need any pollinating agent.	Such flowers need pollinating agents.
Self-pollination is less preferable from the genetic point of view since there is no mixing of genes.	Cross pollination is more preferable from the genetic point of view since new characters can be produced.

30.

a) It is a disc like structure embedded in the uterine wall connected to the embryo. It has villi on the embryo's side of the tissue and on the mother's side, it has blood spaces which surround the villi. It provides a large surface area for nutrients (glucose) and oxygen to pass from the mother's side to the embryo and waste substances from the embryo's side to the mother's blood.

b) (i) Before release of a fertilised egg - The inner lining of the uterus **becomes thick and soft with lot of blood capillaries**

(ii) The lining of the uterus slowly breaks and comes out through the vagina as blood and mucus. This cycle takes place roughly every month and is known as menstruation. It usually lasts for about two to eight days.

**BOARD BASED QUESTIONS:**

31.

a) A-Ureter  
 B- Seminal Vesicle  
 C-Urethra  
 D- Vas deferens

(b) Testosterone -Role  
 - Regulates the formation of sperms  
 - Changes in appearance of boys at the time of puberty.

(c) Function of 'B'-seminal vesicle  
 - Providing nutrition and transportation to sperms.  
 Function of 'C'-Urethra  
 - Serves as a common passage to both sperms and urine.

32.

a) i. a – Anther, c - Stigma

33.	<p>Sexual reproduction is the process of production of offspring by the fusion of male and female gametes. Here, haploid gametes fuse to form diploid zygote which develop into a mature organism.</p> <p><b>Significance of sexual reproduction are as follows:</b></p> <ul style="list-style-type: none"><li>-It gives rise to genetic variations because of genetic recombination that takes place during fusion of gametes.</li><li>-Progenies arising through sexual reproduction sometimes show better combination of traits and get better adapted to their surroundings.</li><li>-Variations in genes play an important role in evolution.</li></ul>
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