Subject: Biology

Topic : How do organisms reproduce? Exam Prep Session 01

Class: X

1. Which of the following hormones play a role during ovulation and menstrual cycle?

   ✗ **A.** Insulin, glucagon

   ✓ **B.** FSH, LH, estrogen and Progesterone

   ✗ **C.** Corticotropins, growth hormone

   ✗ **D.** Testosterone and progesterone

   FSH and LH secreted by pituitary control the ovum development and hormonal secretions of the ovary. Ovary secretes oestrogen and progesterone which causes cyclical changes in the uterus. Thus, in turn, all these four hormones are responsible for ovulation and menstrual cycle.

2. What happens during menopause?

   A. No menstruation.

   B. No maturation of new follicles.

   C. The ovaries stop the secretion of oestrogen

   ✗ **A.** A and B

   ✗ **B.** B only

   ✓ **C.** A, B and C

   ✗ **D.** C only

   Menopause is the time in all women's lives when menstrual cycle stops permanently. It typically occurs between 49 and 52 years of age. At menopause, no oestrogen is secreted by the ovaries and thus, no new follicles and hence, no ovulation occurs; therefore, menstruation stops.

3. The time period when the body undergoes changes, leading to reproductive maturity is called _____.

- ✗ **A.** growth
- ✓ **B.** adolescence
- ✗ **C.** development
- ✗ **D.** marriage

Adolescence is the intermediate growing stage between childhood and adulthood. During adolescence, the body undergoes many physical and psychological changes and attains reproductive maturity. This period varies from person to person.

4. Given below are the steps which occur when an egg is not fertilised.
Arrange them in order.
A) Menstruation occurs.
B) Endometrium degenerates.
C) Progestrone production stops.
D) Corpus luteum degenerates into corpus albicans.

- ✓ **A.** D -> C -> B -> A
- ✗ **B.** A -> C -> D -> B
- ✗ **C.** A -> D -> C -> B
- ✗ **D.** A -> B -> C -> D

If the egg is not fertilised after ovulation, corpus luteum starts degenerating. Corpus luteum produces progestrone. Hence, progestrone production stops. Progestrone is responsible for the maintenance of endometrium. When progestrone levels go low, endometrium starts degenerating. This leads to the shredding of egg along with endometrium and blood. This is called menstruation.

5. Menses consists of blood and mucousal tissue from the inner lining of _____ along with the _____ , which comes out through the vagina.

- ✗ **A.** fallopian tube, sperms
- ✗ **B.** fallopian tube, unfertilized egg
- ✓ **C.** uterus, unfertilized egg
- ✗ **D.** uterus, zygote

Menstruation is the process where the unfertilized egg along with the ruptured uterine wall(endometrium) comes out as blood through vagina.

6. The fluid part of semen is contributed by

i. Seminal vesicle

ii. Prostate

iii. Urethra

iv. Bulbourethral gland

- ✗ **A.** I and II
- ✓ **B.** I, II and IV
- ✗ **C.** II, III and IV
- ✗ **D.** I an IV

The male accessory glands include paired seminal vesicles, a prostate and paired bulbourethral glands. Secretions of these glands constitute the fluid of semen which is rich in fructose, calcium and certain enzymes. The secretions of bulbourethral glands also help in the lubrication of the penis. The urethra is the duct that extends through the penis in male reproductive system and serves a common passage for both sperm and urine. In females, urethra has no reproductive function.

7. ___ are two hormones produced by ovary which take part in menstrual cycle and maintenance of pregnancy.

- ✔ **A.** Estrogen and Progesterone
- ✘ **B.** Testosterone and cortisol
- ✘ **C.** Insulin and glucagon
- ✘ **D.** FSH and LH

Estrogen and Progesterone are the two main hormones secreted by ovary which take part in menstrual cycle and pregnancy. During pregnancy, these hormones prevent the ovary from releasing an egg, thicken the cervical mucus and making it difficult for the sperm to reach the egg and change the lining of the uterus and making implantation difficult.

8. Arrange the following events of the menstrual cycle in correct sequence.

a) release of an egg from the ovary

b) breakdown of the thickened inner wall of the uterus

c) thickening of the wall of the uterus

d) maturation of the ovum

- ✘ **A.** $d \rightarrow a \rightarrow b \rightarrow c$
- ✘ **B.** $a \rightarrow b \rightarrow d \rightarrow c$
- ✔ **C.** $d \rightarrow a \rightarrow c \rightarrow b$
- ✘ **D.** $a \rightarrow c \rightarrow d \rightarrow b$

Every month, usually one egg matures and is released from an ovary by a process called ovulation. In the meantime, the inner lining of the uterus starts thickening and continues to do so even after ovulation, in order to prepare for a fertilised egg. If fertilisation does not happen, the thickened inner lining is broken down and shed in the form of blood.

9. Given are some events occurring in plant fertilisation.

A. Pollen grains land on stigma.

B. Tip of pollen tube breaks and releases the male gametes.

C. Pollen tube is formed.

D. Male gamete fuses with the egg.

Choose the option which represents the correct sequence of events?

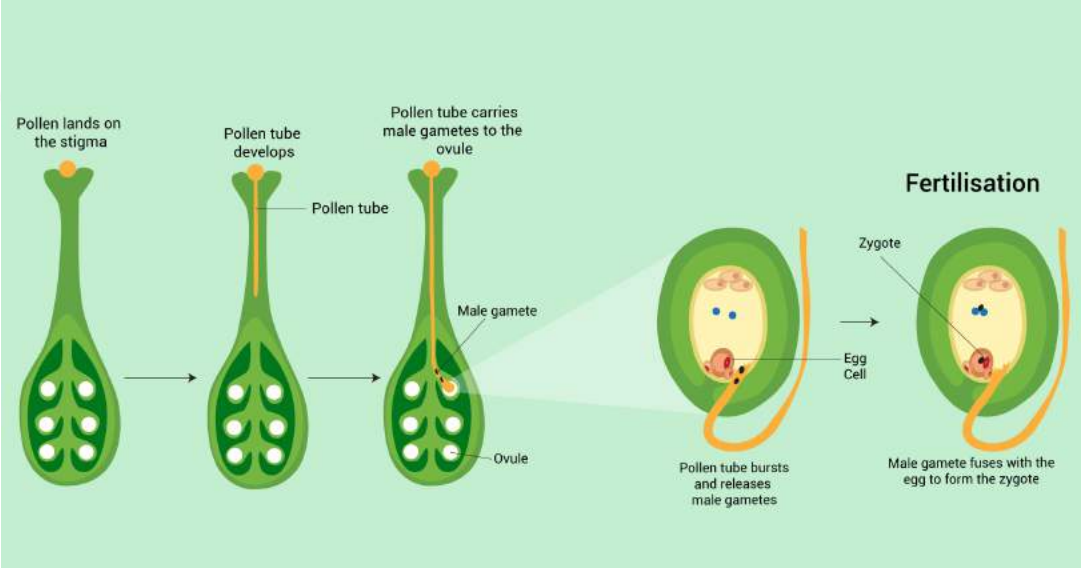
A. A → B → C → D

B. A → C → B → D

C. A → D → B → C

D. A → D → C → B

Once the pollen lands on the stigma, it forms a pollen tube. The pollen tube moves through the style and reaches the ovary. Once it reaches the ovule, the tip of the pollen tube bursts and releases the male gametes. In the ovule, the male gamete fuses with the egg cell (female gamete) to form the zygote. The zygote develops into the plant embryo and the ovule develops into the seed.



10. Sexual reproduction is better mode of reproduction because

A. Faster mode of reproduction

B. off spring have better chances of survival

C. are identical to one another

D. are bigger in size

During sexual reproduction male and female gametes are fused together to form zygote. The gene from two different sources mix together and develops some new features in new progeny. The new traits help the organisms to survive in adverse condition also.