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3 (Sem-6/CBCS) ZOO HE 3

2025

ZOOLOGY

(Honours Elective)

Paper : ZOO-HE-6036

(Reproductive Biology)

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Answer the following as directed : $1 \times 7 = 7$
 - (a) Primary sex differentiation occurs at the time of fertilization. *(State True or False)*
 - (b) _____ is the evolutionary conserved gene responsible for testicular differentiation. *(Fill in the blank)*
 - (c) Fallopian tube is formed from
 - (i) Mesonephric duct
 - (ii) Wolffian duct

(iii) Mullerian duct

(iv) Either (i) or (ii)

(Choose the correct option)

(d) Corpus luteum secretes

(i) Estrogen

(ii) Progesterone

(iii) Both (i) and (ii)

(iv) Testosterone

(Choose the correct option)

(e) Secretion of which gland lubricates the penis

(i) Bulbourethral gland

(ii) Prostate gland

(iii) Seminal vesicles

(iv) Sweat gland

(Choose the correct option)

(f) Identify the correct sequence in which the various stages of parturition take place.

(i) Oxytocin release → Shedding of placenta → Dilation of cervix → Delivery of the baby

(ii) Uterine Contraction → Dilation of the cervix → Shedding of placenta → Delivery of the baby

(iii) Rise in oxytocin secretion → Dilation of the cervix → Delivery of the baby → Shedding of placenta

(iv) None of the above

(g) The layer of the uterus which becomes eroded due to placental villi is known as

(i) Trophoblast

(ii) Endometrium

(iii) Endoderm

(iv) Endothelium

(Choose the correct option)

2. Answer the following questions very briefly :
 $2 \times 4 = 8$

(a) What is Biopotential gonads ?

(b) What is population pyramid ?

(c) State the composition of Seminal Fluid.

(d) What is ovulation ?

3. Answer the following questions : *(any three)*
 $5 \times 3 = 15$

(a) Write a note on the accessory reproductive glands in male.

(b) Explain the different phases of the menstrual cycle.

- ← (c) Write the process of implantation in pregnancy.
- (d) Differentiate between combined oral pills (COP) and progesterone only pills (POP).
- (e) State the functions of Leydig cells and Sertoli cells.

4. Answer **any three** from the following :

$$10 \times 3 = 30$$

- (a) Describe the different follicles present in the ovary with labelled diagram. Discuss the steps in folliculogenesis and their regulation. $2+5+3=10$
- (b) Describe the structure of testis. Explain the importance of the descent of testis into the scrotum. $4+6=10$
- (c) Write the mechanism of differentiation of gonads, genital ducts, external genitalia in human.
- (d) Describe the process of spermatogenesis and its hormonal regulation.
- (e) What do you mean by assisted reproductive technology? Write about different assisted reproductive technologies (ART) used by the couples who are not able to have children.
- (f) Describe the various steps involved in a typical IVF cycle.