

3. (a) Discuss the two cell hypothesis of estrogen biosynthesis in females. (9)
- (b) What are the features of a good contraceptive? (6)
4. (a) Diagrammatically explain the changes in the mammary gland according to the reproductive stage of the females. Add a note on the hormonal regulation of mammogenesis. (8)
- (b) The term "progesterone" means "for gestation (or pregnancy)". Describe how progesterone helps prepare the female body for pregnancy and helps maintain pregnancy. (7)
5. (a) What are the primary causes of infertility in women? Discuss any three. (7)
- (b) Describe any two ART methods that help in the management of infertility in women. (8)
6. Write short notes on **any three** : (5×3=15)
- (a) Composition of semen
- (b) Diapause
- (c) Negative Feedback system
- (d) Hormonal regulation of menstrual cycle

(1000)

[This question paper contains 4 printed pages.]

**Your Roll No.....****Sr. No. of Question Paper : 1265****I**

Unique Paper Code : 2233010013

Name of the Paper : DSE-13, Reproductive Biology and Assisted Reproductive Techniques

Name of the Course : **B.Sc. (H) Zoology, (NEP-UGCF)**

Semester : V

Duration : 3 Hours

Maximum Marks : 90

**Instructions for Candidates**

- Write your Roll No. on the top immediately on receipt of this question paper.
- Attempt any **five** questions in all including question No. 1, which is compulsory.

1. (a) Define (1×5=5)

(i) Luteotrophic factors

(ii) Vasectomy

(iii) Azoospermia

(iv) Capacitation Reaction

(v) Ovulation

P.T.O.

(b) Differentiate between any **five** : (2×5=10)

- (i) Secondary and Graffian follicle
- (ii) Mullerian duct and Wolffian duct
- (iii) Adenohypophysis and neurohypophysis
- (iv) Menopause and Menarche
- (v) Follicular phase and luteal phase
- (vi) Acrosome reaction and cortical reaction

(c) Expand the acronyms (1×5=5)

- (i) HRE
- (ii) MMP
- (iii) GPCRs
- (iv) ICSI
- (v) 3β HSD

(d) Give another name for : (1×5=5)

- (i) Chorionic or placental somatomammotropin
- (ii) Dark region around the nipple
- (iii) The white scar tissue formed in the ovary which replaces the corpus luteum
- (iv) Condition caused due to undescended testes
- (v) Hormones released from pituitary that cause the release of other hormones

(e) State whether the following statements are true or false : (1×5=5)

- (i) The GnRH release process is almost invariably pulsatile in all female and male mammals studied
- (ii) Aromatisation of testosterone converts it into 17β-estradiol.
- (iii) AMH produced by the fetal Leydig cells causes regression of the Fallopian tubes, uterus and upper portion of the vagina in the male fetus.
- (iv) The SRY gene is located at the long arm of the Y chromosome (Yq53.3).
- (v) Measurement of the fructose content in the semen can provide an index of the secretory activity of the prostate gland.

2. (a) Diagrammatically explain the structure of testis. Add a note on the functions of the various cellular components in the testis. (9)
- (b) Discuss sperm transport and maturation in the male genital tract. (6)