2020

ZOOLOGY — HONOURS

Paper : DSE-B-2

(Reproductive Biology)

Full Marks : 50

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer ***question no.* 1** and ***any four*** questions from the rest.

1. Answer 15 (***any fifteen***) questions from the following : 2×15

(a) Mention the location and function of Leydig cells.

(b) Name one male sex accessory gland. State one of its functions.

(c) What is C^{19} steroid?

(d) What is the source of estrogen in ovarian follicle? State one function of estrogen in menstrual cycle.

(e) Distinguish between spermiogenesis and spermatogenesis.

(f) What do you mean by natural contraception?

(g) Write two functions of Sertoli cells.

(h) What do you mean by 'Milk Let Down'?

(i) Name one cryoprotectant and mention its use.

(j) Define LH surge.

(k) Name two techniques of Assisted Reproductive Technology.

(l) Define gestation.

(m) What are atretic follicles?

(n) What is the fate of Wolffian duct?

(o) What is ABP? What is its significance?

(p) State any two causes of female infertility.

(q) Write the favourable temperature at which sperm is stored in sperm bank. What is its significance?

(r) What is hypothalamo-hypophyseal-gonadal axis?

(s) Name the factor and gene responsible for development of testis from mesoderm.

(t) What is aromatase?

(u) What is the principle of diagnosis of human pregnancy?

(v) Write two differences between spermatid and spermatozoa.

(w) What is cumulus oophorus?

(x) State the function of progesterone in implantation.

(y) What is capacitation?

2. Write the biosynthetic steps of testosterone from cholesterol along with the necessary enzymes. 5

3. Name the different phases of menstrual cycle. Write the uterine changes during each phase. 1½+3½

4. What are the different contraceptive methods in females? Why is diagnosis of polar body an important tool in female fertility? 3+2

5. Discuss the steps of implantation in humans. What is the role of estrogen in pregnancy? 3+2

6. Elaborate the role of prostaglandins and relaxin in parturition. 2½+2½

7. What are the criteria to be an egg donor? State the differences between IVF and IUI. 2+3

8. Comment on ***any two*** : 2½×2

(a) Sperm and Egg binding proteins

(b) Frozen embryos

(c) Hormonal control of lactation

(d) Acrosome reaction.

9. Discuss the role of thecal cells and granulosa cells in the synthesis of estrogens. 2½+2½
