

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 C¹⁹ 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?

Please Turn Over

- (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. $1\frac{1}{2}+3\frac{1}{2}$
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. $2\frac{1}{2}+2\frac{1}{2}$
7. What are the criteria to be an egg donor? State the differences between IVF and IUI. 2+3
8. Comment on *any two* : $2\frac{1}{2}\times 2$
- (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. $2\frac{1}{2}+2\frac{1}{2}$
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