

M.Sc. (Part—I) Semester—I (C.B.C.S. Scheme) Examination

ZOOLOGY

(Gamete Biology)

Paper—III

Time : Three Hours]

[Maximum Marks : 80

- Note :—** (1) All questions are compulsory.
 (2) All questions carry equal marks.
 (3) Illustrate your answer with suitable diagrams wherever necessary.

1. Describe the following :

- (a) Morphology of Leydig cell and its functions
- (b) Formation of semen
- (c) Regulation of spermatogenesis
- (d) Gametic gene expression.

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OR

- (e) Differentiation of Leydig's cells
- (f) Composition of semen
- (g) Assessment of functions of sperm (motility)
- (h) Heterogamy in eukaryotes.

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2. Describe prevention of polyspermy and formation of fertilization cone.

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OR

Explain reaction of sperm during fertilization.

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3. Write account on genomic imprinting.

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OR

Describe the process of gastrulation and organogenesis.

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4. Explain the following :

- (i) Multiple ovulation
- (j) Cryopreservation of gametes
- (k) ICSI and GIFT
- (l) Disadvantages of ART.

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OR

- (m) In-Vitro Fertilization
- (n) Screening of genetic disorders
- (o) In-Vitro gamete maturation
- (p) Embryo sexing Y specific probes. 16

5. Explain the following .

- (q) Applications of transgenic animals
- (r) Procedure of knockout mice
- (s) Ex Vivo gene therapy
- (t) Antisense therapy. 16

OR

- (u) Procedure of transgenic animals
- (v) Applications of knockout technology
- (w) In Vivo gene therapy
- (x) Vectors used in gene therapy. 16