AQ – 821

First Semester M. Sc. I. (CBCS) Examination

ZOOLOGY

Paper – III

Gamete Biology

P. Pages : 3

Time : Three Hours] [Max. Marks : 80

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

1. Explain the followings :—

(a) Differentiation of Foetal Leydig cells.

(b) Assessment of sperm functions.

(c) Regulation of spermatogenesis.

(d) Formation of semen.

OR

(e) Morphology of Leydig cells.

(f) Composition of semen.

(g) Regulation of Leydig cells.

(h) Gamete specific gene expression. 16

2. Give an account of the followings :—

(i) Molecular biology of ovarian follicular growth and differentiation.

(j) Vitellogenesis.

(k) Formation of fertilization cone.

(l) Sperm capacitation.

OR

(m) Sperm motility.

(n) Regulation of ovulation.

(o) Role of cell surface molecules in sperm–egg recognition in animals.

(p) Fusion of sperm and egg plasmalemma. 16

3. Describe various types of cleavage in animals.

OR

Describe the gastrulation and formation of germ layers. 16

4. Explain the followings :—

(q) Embryo sexing Y specific probes.

(r) ICSI.

(s) Cloning of animals by embryo transfer.

(t) Collection and cryopreservation of gametes.

OR

(u) In vitro fertilization.

(v) GIFT.

(w) Superovulation.

(x) Disadvantages of ART. 16

5. Describe the gene therapies.

OR

Describe the applications of transgenic animals and gene knockout technology. 16