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E-6538

M.Sc. (IIIrd Semester) Examination, 2021

ZOOLOGY

(Molecular Endocrinology and Reproduction : Biology of Reproduction)

Time Allowed : Three Hours

Maximum Marks : 70

SECTION - A

Note : Attempt any ten questions. Each question carries one mark. **10×1=10**

Q. 1. Objective type :

(i) Spermiogenesis is the transformation of :

(a) Spermatogonium into primary spermatocyte

(b) Spermatogonium into functional spermatozoa

(c) Primary spermatocytes to secondary spermatocytes

(d) Spermatids into spermatozoa

(ii) During fertilization the enzyme which facilitates penetration of the egg by spermatozoa is :

(a) Acid phosphates

(b) Alkaline phosphates

(c) Hyaluronidase

(d) Acetylcholinestrase

(iii) The fertilized egg in human female gets implanted in uterus after :

(a) Two months of fertilization

(b) About one week days of fertilization

(c) One month of fertilization

(d) Three weeks of fertilization

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(iv) Follicle Stimulating hormone (FSH) derives it name from the fact that it stimulates the growth of ovarian follicle in the female, in male its target cell is :

(a) Germ cells

(b) Sertoli cells

(c) Leydig cells

(d) Pachytene stage germ cells

(v) During fertilization, polyspermy is prevented by :

(a) Zona pellucida in the presence of Na^+ ions

(b) Vitelline membrane in the presence of Ca^{2+} ions

(c) Cortical granules in the presence of Ca^{2+} and Na^+

(d) Influx of Na^+, Ca^{2+} and Mg^{2+} ions

(vi) LH (Luteinizing hormone) is released from the :

(a) Ovary

(b) Testes

(c) Thyroid gland

(d) Anterior pituitary gland

(vii) Contraception is the _____ of fertilization without destroying fertility by natural mechanical or chemical means.

(viii) The permanent contraceptive methods are _____.

(ix) Cavity of graafian follicle is known as _____.

(x) At the anterior extremity of the sperm is a special granule called _____.

(xi) Leydig cells discovered by _____.

(xii) Leydig cells are also known as _____ cells.

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SECTION - B

Note : Attempt any five questions. Each question carries 2 marks. **2×5=10**

Q. 2. Very short answer type (25-30 words) :

(i) Stem cell

(ii) Spermatogenesis

(iii) Leydig cell

(iv) Azoospermia

(v) Folliculogenesis

(vi) Estrous cycle

(vii) Vasectomy

SECTION - C

Note : Attempt any five questions. Each question carries 4 marks. **5×4=20**

Q. 3. Short answsr type (250 words) :

(i) Mechanism of sex determination.

(ii) Sertoli cells.

(iii) Follicular atresia.

(iv) Menstrual cycle in man.

(v) Estrous behaviour in cycling animals.

(vi) Polycystic ovary.

(vii) Hormonal method of contraceptive.

SECTION - D

Note : Attempt any three questions. Each question carries 10 marks. **3×10=30**

Q. 4. Essay type (more than 500 words) :

(i) Define the term spermatogenesis. Discuss the structural & molecular events involved in the spermatogenesis.

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(ii) Describe the extra & intra-gonadal factors in folliculogenesis.

(iii) What is contraception ? Describe various contraceptive methods of birth control.

(iv) What is differentiation ? Write an essay on differentiation.

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