Roll No. .....

D–1015

M. Sc. (Fourth Semester) (Main/ATKT) EXAMINATION, 2020

ZOOLOGY

(Optional Group—E)

Paper Fourth

(Molecular Endocrinology and Reproductive Technology)

Time : Three Hours] [*Maximum Marks : 80*

Note : Attempt all Sections as directed.

Section—A 1 each

(Objective/Multiple Choice Questions)

Note : Attempt all questions.

Choose the correct answer :

1. Who isolated Growth Hormone in highly purified state ?
   (a) C. H. Li
   (b) Li. Liu and Dixon
   (c) Hisaw and Leonard
   (d) P. E. Smith and Zondek
2. Who separated the pituitary gonadotropin hormones into two components, FSH and LH ?
   (a) C. H. Li

   (b) Li. Liu and Dixon
   (c) Hisaw and Leonard
   (d) Riddle
3. Who discovered protectin hormone ?
   (a) Riddle
   (b) Stricker and Grueter
   (c) White
   (d) Kamm
4. Who separated the neurohypophysis hormone in two groups, oxytocin and vasopressin ?
   (a) White
   (b) Riddle
   (c) Stricker
   (d) Kamm
5. Which hormones are responsible for male brain sex ?
   (a) AMH and Estrogen
   (b) AMH and Androgens
   (c) Androgens and Estrogens
   (d) None of these
6. How many carbon atoms are found in Prostaglandin ?
   (a) 18
   (b) 19
   (c) 20
   (d) 21

7. FSH (Follicle Stimulating Hormone) contains 210 amino acids. How many amino acids are found in β-chain of FSH ?

   (a) 118

   (b) 115

   (c) 112

   (d) 29

8. ADH is also known as :

   (a) Oxytocin

   (b) Mestocin

   (c) Vesotosin

   (d) Vasopressin

9. Zink Finger is related with :

   (a) Plasma membrane receptor

   (b) Orphan receptor

   (c) Cytosolic receptor

   (d) Epinephrine receptor

10. Which chemical substance inhibits the synthesis of thyroxine ?

    (a) Benzoic acid

    (b) Thio-urea and Thio-uracil

    (c) Acetic acid

    (d) Carbolic acid

11. Which hormone is released from Gastrointestinal tract ?

    (a) CCK

    (b) Gastrin

    (c) Enterogesterene

    (d) All of the above

12. Which of the following glands secretes peptide and steroid both types of hormones ?

    (a) Carpus luteum

    (b) Kidney

    (c) Adrenal gland

    (d) Carpusl uteum and Kidney

13. Oxidative coupling reactions are used in the synthesis of :

    (a) Cortisole

    (b) Thyroxine

    (c) Epinephrine

    (d) Aldosterone

14. Characteristics of Intracellular receptors that regulate gene transcription including all of the following except :

    (a) DNA binding site

    (b) A transcription activating domain

    (c) An extracellular binding site

    (d) May be singnaled by the lipid soluble molecule

15. G-Proteins are involved in recycling signals through G-protein linked receptors. Which of the following forms of G-protein is considered to be in active state ?

(a) G-Protein–ADP

(b) G-Protein–ATP

(c) G-Protein–GDP

(d) G-Protein–GTP

16. ..... is a common second messenger.

(a) *c*-AMP

(b) *c*-ATP

(c) Cyclic GTP

(d) Cyclic MHC

17. The receptors for which of the following hormone is a transcription factor ?

(a) Estradiol

(b) Insulin

(c) Glucagon

(d) Adrenaline

18. Which of the following signal molecules bind to a receptor situated in the cytoplasm, not the outer membrane of the cell ?

(a) Interferon

(b) Epidermal growth factor

(c) Progesterone

(d) Adrenaline

19. Vasectomy is related with :

(a) Ovary

(b) Vas-deferens

(c) Testis

(d) Prostate gland

20. Laprotomy is also known by :

(a) Ovariectomy

(b) Tubectomy

(c) Vasectomy

(d) Celiotomy

Section—B 2 each

(Very Short Answer Type Questions)

Note : Attempt all questions.

1. Describe the role of TSH and peroxidase enzyme in Thyroxine synthesis.
2. Write *four* characters of hormone.
3. How many types of hormone receptors are found ? Give their names.
4. Give the definition of orphan receptors.
5. Define cyclic nucleotide and their types.
6. What is Transcription ? Define.
7. Comments on ovariectomy.
8. Give the definition of Tubectomy.

Section—C 3 each

(Short Answer Type Questions)

Note : Attempt all questions.

1. How to pre-pro-insulin and pre-pro-glucogone structure convert into insulin and glucagan.
2. Write about the syntehsis of Leukotriene.
3. Explain membrane receptors in short.
4. Explain Helix-turn-helix in short.
5. Describe miscellaneous second messengers.
6. What is Phosphorylation and Dephosphorylation ?
7. Explain the benefits of embryo-transfer technology.
8. Define and explain vasectomy.

Section—D 5 each

(Long Answer Type Questions)

Note : Attempt all questions.

1. Describe structure, synthesis and function of prostaglandin.

   Or

   Write about the synthesis mechanism of Catacholamine and Idollayronine hormones.

2. Write about cytosolic receptors and it role in hormone action.

   Or

   Describe Excitatory and Inhibitory G-Protein and explain its role in hormone action.

3. Write about the releasing stimuli of different hormone and pulsatile release of hormone.

   Or

   How does Ca^{++} enter inside the cell and explain its role in cell and hormones action.

4. Explain Estrous Cycle in detail.

   Or

   Write about the surgical and chemical ablation technique.