

**P.G. 1st Semester-2018****ZOOLOGY****(Endocrinology & Reproductive Biology,  
Animal Physiology & Biochemistry)****Paper : MZOOCCT103**

Full Marks : 40

Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their  
own words as far as practicable.***UNIT-I****(Endocrinology & Reproductive Biology)****(Marks : 20)**1. Answer any **four** of the following questions:

1×4=4

- What is the role of 5 $\alpha$ -reductase in sex hormone metabolism?
- State two 'transporter proteins' which are involved in thyroid hormones biosynthesis.
- What is the basic difference between 'neuromodulator' and 'neurohormone'?
- Define neurohaemal organ with an example.

- Name one ligand each for 'Channel-linked receptor' and 'tr-protein-coupled-receptor'.
- Why is 'Testosterone therapy' detrimental to spermatogenesis?

2. Answer any **three** of the following questions:

2×3=6

- What are the characteristic features of 'luteal phase' in menstrual cycle?
- What is renin-angiotensin system?
- Write down the roles of AANAT and HIOMT in indolamine synthesis.
- What are the effects of glucagon in carbohydrate metabolism?
- Write down the effects of cortisol on stress adaptation.

3. Answer any **two** of the following questions:

5×2=10

- Briefly describe the different cell types and their hormonal products present in anterior pituitary. 5
- Briefly describe the biosynthetic pathway of glucocorticoids and mineralocorticoids with a suitable flow chart. 5

*[Turn Over]*

- c) What is 'gastrin'? How the action of this hormone is regulated by HCl? What are the roles of gastrin in digestion? 1+2+2
- d) Explain the significance of C-peptide in insulin biosynthesis and regulation of Type-1 diabetes. 5

## UNIT-II

### (Animal Physiology & Biochemistry)

(Marks : 20)

4. Answer any **four** of the following questions: 1×4=4
- a) What are isozymes?
- b) Mention the level of cholesterol in human blood.
- c) Name two families of marine polychaetes where chlorocruotin is present.
- d) What is Piff?
- e) What do you mean by direct calorimetry?
- f) What is cardiac inhibitory centre?
5. Answer any **three** of the following questions: 2×3=6
- a) What is Reverse Bohrs effect? State under what environmental conditions this effect is profound. 1+1

- b) Differentiate partial endothermy and facultative endothermy. 2
- c) What assumptions are made in deriving the Michaelis Menten Equation? 2
- d) Explain counter current mechanism with reference to nephron structure. 2
- e) What is Cori cycle? 2
6. Answer any **two** of the following questions: 5×2=10
- a) Describe the process of cholesterol biosynthesis. 5
- b) Describe the role of baroreceptors in cardiovascular homeostasis. 5
- c) How do gluconeogenesis differs from glycogenesis? 5
- d) What factors influence BMR? How does BMR differ from TMR? What is body core? List why BMR declines when one grows old. 1+2+1+1