

**2017****M.Sc.****4th Semester Examination****HUMAN PHYSIOLOGY****PAPER—PHY-401***Full Marks : 40**Time : 2 Hours*

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

**( Unit—37 )**

Answer all questions from the following :

1. (a) Discuss the role of coactivators and corepressors in transcriptional regulation at nuclear receptors.  
(b) What are GTF<sub>2</sub>? 4+1

Or

- (a) Describe diagrammatically the biosynthesis of GHRH with its genomic and mRNA organization.

*(Turn Over)*

- (b) What are the effects of intravenous injection of GHRH and ghrelin alone or in combination on GH release?  
(1+2)+2

2. (a) Discuss critically the role of transcription factors on pituitary development. 5

Or

- (a) Describe the structural details of lactotroph cells.  
(b) Write the secretory pattern of prolactin. 3+2
3. (a) How do iodide cycle critically regulate the synthesis of  $T_3/T_4$  hormone.  
(b) Schematically describe the membrane topology of TPO. 3+2

Or

- (a) Describe briefly the role of catecholamines for "fight or flight" response during threatening of homeostasis.  
(b) How is aldosterone regulates blood volume and pressure. 3+2
4. (a) Elaborate the regulation of parathyroid hormone gene with evidences.  
(b) Discuss the physiological action of parathyroid hormone on bone.  $2\frac{1}{2}+2\frac{1}{2}$

Or

- (a) What do you mean by 'Autoimmunity'?

- (b) Write the molecular mechanisms of peripheral T and B cell tolerance.
- (c) Give the examples of 'organ specific' and 'systemic' autoimmune disease. 1+2+2

**( Unit—38 )**

Answer all questions from the following :

1. (a) What is phenotypic sex? Write the functions of SRY gene in sex development.
- (b) State the pathophysiology and clinical features of Klinefelter syndrome. (1+1 $\frac{1}{2}$ )+(1+1 $\frac{1}{2}$ )

Or

- (a) Elaborate the structural details of semi neferous tubule with special emphasis on sertoli cell. 3 $\frac{1}{2}$ +1 $\frac{1}{2}$
2. (a) Briefly discuss two approaches for subfertility treatment in case of women.
- (b) What are antiestrogens? Briefly state their mechanism of action. 2+(1+2)

Or

- (a) Co-relate the physiological relationship between biorhythms and female cycle.

- (b) State the risk factors of endometrisis.
- (c) Briefly write pathophysiological nature of nontubal ectopic pregnancy.  $1\frac{1}{2}+1\frac{1}{2}+2$
3. (a) What is progestogen only Pill (POP) ?
- (b) State the side effects of combined hormonal contraceptives.  $2+3$

Or

- (a) Mention the sources of ROS in human semen.
- (b) Discuss the effects of ROS on sperm motility and spermatozoa DNA.  $2+(1\frac{1}{2}+1\frac{1}{2})$
4. (a) State the regulatory functions of any two trace minerals for neonatal development.
- (b) Briefly discuss the embryonic changes of CV system with special reference to formation of cardiac septa.  $2+3$

Or

- (a) Discuss the structure of melatonin receptor ?
- (b) Name the target organs of melatonin.
- (c) How melatonin maintain neuro endocrine rhythms and seasonality at human reproduction.  $(1\frac{1}{2}+1\frac{1}{2})+2$
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