

**2013**

**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.*

*Write the answers to the questions of each Unit in separate books.*

**UNIT—37**

Answer any *two* questions from the following :

1. (a) Describe the biosynthesis of vasopressin in a magnicellular neurone from vasopressin gene.
- (b) Elaborate the relationship of plasma and urine osmolality to plasma vasopressin.

4+(3+3)

(Turn Over)

2. (a) Discuss the role of NIS or SLC 5A during iodine uptake by thyrocyte?  
(b) What is TPO?  
(c) Write the mechanism of action of TPO in iodide oxidation.  
4+2+4
3. (a) Discuss the role of parathyroid hormone on distal tubular calcium transport.  
(b) State the molecular mechanism of PTH-induced bone resorption.  
(c) "Parathyroid hormone related protein acts as a calciotropic hormone during foetal life"—justify it.  
4+4+2
4. Write notes on :  $2\frac{1}{2} \times 4$   
(a) Modulation of gene expression by PKA.  
(b) Biphasic nature of insulin secretion.  
(c) Role of catecholamine on cardiovascular system.  
(d) Cushing's Syndrome.

**UNIT— 38**

Answer any *two* questions from the following :

1. (a) What is spermatidogenesis ?  
(b) Elaborate the different phases of spermatid differentiation and maturation with proper diagram.  
2+(6+2)
2. (a) What do you mean by Ferguson's reflex ?  
(b) Foetus sulphates placenta desulphates" — discuss the significance of the above statement in steroid biosynthesis by the feto-placental unit.  
(c) What is delayed implantation ?  
3+4+3
3. (a) Discuss the role of different hormones in embryonic development.  
(b) Write the importance of specific growth factors for foetal embryogenesis.  
6+4

4. (a) What type of cardiovascular changes occur just before birth?
- (b) Write the importance of protein and fat in foetal development.
- (c) Mention briefly the role of metabolism in reproduction.

4+4+2