PG/IVS/H. Phy-XIX/11

M.Sc. 4th Semester Examination, 2011

HUMAN PHYSIOLOGY

PAPER—XIX

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

Illustrate the answers wherever necessary

UNIT—37

Answer any *two* questions : 10×2

1. (*a*) Discuss the biosynthesis of vasopressin in a magnicellular neurone.

(*b*) State the relationship of plasma vasopressin to plasma and mine osmolality. 4 + (3 + 3)

2. (*a*) Elaborate the PTH-Calcium feedback loop that controls calcium homeostasis.

(*b*) What do you know about Ca-sensing receptor that influence the PTH secretion ? 4 + 6

3. (*a*) Most of the hormonal and neuronal regulation of gastrointestinal function is 'intrinsic' while some are 'extrinsic' – Discuss.

(*b*) State the names, origin, mode of stimulation and function of two gastrointestinal hormones termed as candidate hormones. 4 + (3 + 3)

4. (*a*) Discuss the mechanism of formation of H_2O_2 in the follicular cells required for the oxidation reaction in the biosynthesis of thyroid hormone. What do you mean by thyroglobulin endocytosis ?

(*b*) How do catecholamines affect cardiovascular functions ? $\left(4+2\frac{1}{2}\right)+3\frac{1}{2}$

UNIT – 38

Answer any *two* questions : 10×2

1. (*a*) Discuss placental steroidogenesis during pregnancy with special reference to maternal -foetal-placental unit.

(*b*) Write notes on ectopic pregnancy. $6 + 4$

2. (*a*) "Different growth factors have significant role on foetal tissue differentiation" – Discuss.

(*b*) Trace minerals like copper and zinc are essential for foetal nutrition. – Explain it. $6 + (2 + 2)$

3. (*a*) Discuss the role of melatonin in breast cancer.

(*b*) With proper diagram describe the midcycle dynamics of gonadotropin regulation. $5 + 5$

4. (*a*) Describe the Δ^4-pathway of testicular androgen biosynthesis.

(*b*) State the role of testicular androgens in the sextual differentiation. Mention the key elements of spermatogenesis. 4 + (3 + 3)
