PG/IVS/PHY-401/14

M.Sc. 4th Semester Examination, 2014

HUMAN PHYSIOLOGY

PAPER – PHY-401

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

[*Marks* : 20]

Answer any **two** questions

1. (*a*) Describe the synthesis of TRH from TRH preprohormone gene.

    (*b*) Discuss the effects of TRH on the pituitary gland and its mechanism of action.

(c) Elaborate the role of different aquaporins in vasopressin mediated antidiuresis. 3 + (3 + 1) + 3

2. (a) "Bone and cartilage are major direct and indirect targets of GH" — Explain it.

(b) Discuss the different physiological roles of GH and IGF-I in prenatal and postnatal growth.

(c) Why GH is considered primarily as a diabetogenic hormone ?   3 + 4 + 3

3. (a) Describe the regulatory role of aldosterone during excessive blood loss.

(b) Mention the physiological effects of epinephrine.

(c) "Grave's disease is a autoimmune thyroid disease" — justify.   4 + 2 + 4

4. Write notes on :

(i) Dimerization of nuclear receptors

(**3**)

(*ii*) Metabolic role of catecholamines in lipid synthesis

(*iii*) The role of parathyroid hormone on osteo-blastic lineage. 3 + 3 + 4

UNIT – 38

[*Marks* : 20]

Answer any **two** questions

1. (*a*) Describe the steroidogenic pathway in the human ovary.

   (*b*) What is the "two cell theory" for ovarian steroidogenesis ? 5 + 5

2. (*a*) What are invasive and non-invasive implantation ?

   (*b*) Discuss the molecular mechanism of implantation.

   (*c*) Write the composition of matured and transitional milk, and colostrum. 3 + 5 + 2

(4)

3. (a) What are the causes of ectopic pregnancy ?

   (b) What are the risk factors of endometriosis ?

   (c) What do you mean by retrograde mens-
   truation ?   4 + 4 + 2

4. (a) Describe the stages of development of
   respiratory organ in human fetus.

   (b) Write the importance of folic acid and
   vitamin B_{12} at the time of fetal development.

   (c) Why foetal insulin is so important for its
   growth ?   5 + 3 + 2

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