2012

M.Sc.

1st Semester Examination

HUMAN PHYSIOLOGY

PAPER—PHY-104

Full Marks : 40

Time : 2 Hours

The figures in the 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 - 7)

Answer any *two* questions.

1. (a) What do you mean by brainstem reticular formation ?

(b) Briefly describe the anatomy and connections of reticular formation with suitable diagrams.

(c) What is decerebrati rigidity ? $1+(2\frac{1}{2}+2\frac{1}{2})+4$

2. (a) Briefly describe the neural circuitry between and within the structures related to basal ganglia and discuss the functional impairement of these circuitry.

(b) Discuss the role of basal ganglia in saccadic eye movements. 6+4

3. (a) What is flexion reflex?

(b) Discuss the role of descending tracts in the regulation of muscle tone and spinal reflexes.

(c) What is Gamma reflex loop ? What is its significance ? 2+5+3

4. (a) What is tip-link? Describe the structure of crista ampullaris.

(b) Discuss the "gating spring" model of transduction in vestibular hair cells. (1+4)+5

(Unit-8)

Answer any *two* questions.

1. (a) What are declarative and non-declarative memory ?

(b) Discuss the cellular mechanism of sensitization in gill-withdrawal reflex of 'Aplysia'.

(c) What is Contra-lateral neglect syndrome ? 3+4+3

2. (a) What is meant by 'functional reorganisation of the brain cells without repair' ?

(b) Write briefly on the basis of peripheral nerve regeration.

(c) What are anterograde and retrograde axoplasmic transport ? What are the importance of such transports ? 4+2+4

3. (a) What are Zeitgebers ?

(b) Discuss the neural control of sleep-wakefulness cycle.

(c) Write about the role of blood-brain barrier in nutrient transport. 2+5+3

4. (a) Write the mechanisms of smooth music contraction by Caldesmon with suitable diagram.

(b) Describe briefly the structural characteristics of smooth muscle. 5+5

———