UG/II/PHY/H/III/18 (New)

2018

PHYSIOLOGY

[Honours]

PAPER – III

Full Marks : 90

Time : 4 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

[NEW SYLLABUS]

GROUP–A

Answer any **two** questions, taking **one** question from each Subgroup : 15 × 2

Subgroup–A(*a*)

1. (*a*) Discuss the role of cerebellum in the regulation of voluntary movement with special reference to cerebellar connections.

(*b*) What is muscle tone ? Write briefly on maintaining muscle tone in human body. 8 + 7

2. (*a*) Describe the histological structure of skin with a labelled diagram.

(*b*) Write down the functions of sweat.

(*c*) How sweat secretion is regulated ?

(4 + 4) + (3 + 4)

3. (*a*) Discuss briefly about the absorption, distribution and excretion of a drug in human body.

(*b*) Critically discuss about the characteristics of dose response curve of drug in human body with suitable diagram.

(*c*) Write down the difference between pharmacokinetics and pharmacodynamics.

(2 + 2 + 2) + 5 + 4

Subgroup—A (*b*)

4. (*a*) Discuss the origin, course and termination of auditory pathway.

(*b*) What is adaptation of receptors ? Write briefly on phasic and tonic adaptations. 8 + (3 + 4)

5. (*a*) Describe the pathway of transmission of pain impulse from receptor to brain.

(*b*) What are photopic and scotopic visions ? Describe briefly pupillary reflex. What is Agryel Robertson Pupil ? 8 + (3 + 2 + 2)

6. (*a*) Classify physiological work with example.

(*b*) What do you understand by Excess post exercise oxygen consumption (EPOC). Discuss in brief the factors affecting EPOC. 6 + (3 + 2) + 4

GROUP–B

Answer any **five** questions, taking at least **two** questions from each Subgroup : 8 × 5

Subgroup–B(*a*)

7. Discuss the formation, circulation and functions of CSF. 2 + 3 + 3

8. Justify the statement "Autonomic Nervous system is one of the main controllers of homeostasis." 8

9. Classify receptors with description of their structures. Write down the mode of action of each. 8

10. Describe the mechanism of action of phenoxybenzamine and phentolamine. 4 + 4

11. (*a*) State the effect of guanethidine on human body.

    (*b*) Write down the chemistry and mechanism of action of a drug affecting synapse.

    4 + (2 + 2)

Subgroup–B(*b*)

12. Write brief notes on (*i*) Kinesthetic sensation. and (*ii*) Electroretinogram. 4 + 4

13. Describe the modern concept of colour vision. 8

14. Discuss briefly the function of basal-ganglia. What is hypokinetic disorder. 5 + 3

15. With a neat, self explanatory diagram, trace the nerve pathways of taste sensation. 3 + 5

16. (*a*) Discuss briefly about the application of ergonomics to increase the industrial productivity.

(*b*) Discuss the occupational health problem of mine workers. 4 + 4

GROUP–C

Answer any **five** questions, taking at least **two** questions from each Subgroup : 4 × 5

Subgroup–C(*a*)

17. Describe EEG pattern from wakefulness to sleep. 4

18. Explain habituation and declarative memory. 2 + 2

19. What are sensible and insensible perspiration ? 2 + 2

20. Write down the effects of dieuretics on renal function. 4

21. Write down the physiological basis of fever. 4

Subgroup–C(*b*)

22. What is Muller's law of specific nerve energies ? 4

23. (*a*) Mention the factors affecting visual acquity.

(*b*) Why cornea does not have any blood supply ? 2 + 2

24. Give the physiological importance of outer and inner hair cells. 4

25. Write a brief note on Silicosis. 4

26. How emotions can affect the sports performance ? 4