

2019

Part – II

**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.*

Answer any **two** questions, taking at least **one** question from each subgroup. 15×2=30

**Sub-Group – A(a)**

1. a) Describe the structural organization of spinal cord.
- b) What is reflex action? Write down its properties.
- c) Write short notes on 'Irradiation' and 'Sub-bimimal fringe'. 5+(2+3)+(2½+2½)

**P.T.O.**

2. a) What do you mean by heat loss and heat gain processes?  
b) Describe briefly the regulation of body temperature in respect of higher centres.  
c) Write down the functions of sebum. 6+6+3
3. a) Write down the importance of pharmacology in the study of physiological processes.  
b) State the mechanism of action of barbiturates and describe its effects on human body.  
5+(4+6)

**Sub-Group – A(b)**

4. a) What is visual activity? How can it be measured?  
b) State the chemical changes in retina on light exposure.  
c) What is Argyll Robertson pupil? (2+3)+7+3
5. a) State the differences between 'Work' and 'Sports'.  
b) Describe the effects of graded work on heart rate, blood pressure and cardiac output.  
c) What is isokinetic work? 3+(3+4+3)+2
6. a) Write the application of anthropometry in nutrition and ergonomics.  
b) Describe briefly the process of industrial safety.  
8+7

## Group – B

Answer any **five** questions, taking at least **two** from each sub-group : 8×5=40

### Sub-Group – B(a)

7. Write down the origin, courses and termination of pyramidal tract. 2+4+2
8. State the connections and functions of parietal lobe. 4+4
9. Mention the alpha and beta adrenergic receptors and their agonists and antagonists. 8
10. Write the differences between eccrine and apocrine type of sweat glands. What is triple response? 5+3
11. State the effects and mechanism of action of propranolol. 4+4

### Sub-Group – B(b)

12. Write distribution and neural pathway of touch. 3+5
13. Describe the histological structure of retina. 8
14. Write the structure of organ of Corti. How discrimination of sound frequency and loudness can be done? 4+4
15. What is  $VO_2$  max? State the factors affecting  $VO_2$  max. 2+6

16. Physical work capacity measurement with trade mill is more appropriate than bicycle ergometer and Harvard step test method—Justify it. 8

### Group – C

Answer any **five** questions, taking at least **two** questions from each sub-group : 4×5=20

#### Sub-Group – C(a)

17. Write down the functions of amygdala. 4  
18. What is decerebrate rigidity? 4  
19. What is aphasia? 4  
20. Write short note on hypothermia. 4  
21. What is  $LD_{50}$  and  $ED_{50}$ ? 4

#### Sub-Group – C(b)

22. State the Weber-Fechner law. 4  
23. Write short note on colour blindness. 4  
24. What are different modalities of taste? Mention the specific distributions of taste buds for different modalities. 2+2  
25. Write short note on Farmer's lung. 4  
26. Write the general principles of physical training. 4