



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours Part-II Examination, 2022

PHYSIOLOGY

PAPER-V

Time Allotted: 4 Hours

Full Marks: 75

The figures in the margin indicate full marks.

GROUP-A

1. Answer any *five* questions from the following: 3×5 = 15
- (a) What are greenhouse gases?
 - (b) What is bionetworking?
 - (c) Write the basic principle of blood gas analyzer. Write its any one application.
 - (d) What are GABA receptors?
 - (e) What is algorithm?
 - (f) What do you mean by upper motor and lower motor neurons?
 - (g) Mention the effect of acceleration on human body.
 - (h) What do you mean by degrees of freedom?
 - (i) What are the causes of cyanosis?
 - (j) What are biomedical sensor materials?

GROUP-B

Answer any *three* questions

10×3 = 30

2. (a) What do you mean by analog and digital computer? Mention the functions of different units of CPU. 2+5
- (b) Write the uses of computer in human health. 3
3. (a) What is biorhythm? Describe the role of time-keeping genes in regulation of biorhythm. 2+3
- (b) Explain the mechanism of biological clock. 5
4. (a) Describe the formation and functions of CSF. 3+3
- (b) Mention the distribution and functions of parasympathetic nerves. 2+2
5. (a) Write the principle of operation of pacemakers. 3
- (b) Mention the role of ultrasonography and magnetic imaging in diagnostic and therapeutic physiology. $3\frac{1}{2} + 3\frac{1}{2}$

6. (a) What is G-force? Describe the physiological effects of positive G-force. 2+5
(b) What do you mean by 'Chronic Mountain Sickness'? 3
7. (a) What is ionizing radiation? Discuss the harmful effects of ionizing radiation on human body. 2+4
(b) Describe briefly the effects of pesticides on human health. 4
8. (a) Describe the structure and innervations of muscle spindle. 4
(b) State briefly the role of muscle spindle in voluntary motor activity. 4
(c) What is artificial pacemaker? 2

GROUP-C

Answer any two questions

15×2 = 30

9. (a) Why is thalamus called relay centre? 2
(b) Describe the anatomical organizations of basal ganglia. 5
(c) Mention the effects of hemisection of spinal cord. 4
(d) Describe the role of hypothalamus in regulation of food intake. 4
- 10.(a) What do you know about biological database? 3
(b) State the role of bioinformatics in drug development. 4
(c) Distinguish between RAM and ROM. 4
(d) State the importance of endoscopy. 4
11. Write short notes on the following: 3×5 = 15
(a) Parkinson disease
(b) Cyanosis
(c) Air pollution
(d) NMDA receptor
(e) Tract of Goll.
- 12.(a) What is standard deviation? 2
(b) Mention the differences between bar diagram and histogram. 3
(c) What is Student's t-test? Compute the standard deviation of the following heart rates (b/m) of 10 persons: 6
76, 82, 78, 83, 81, 77, 80, 75, 79, 84.
(d) Write a short note on Null hypothesis. 4

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