



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL
B.Sc. Honours Part-II Examination, 2022

PHYSIOLOGY

PAPER-IV

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 do you mean by IRV and MBC?
 - (b) What is alkaptouria?
 - (c) What is colony hybridization?
 - (d) What is bacterial conjugation?
 - (e) What is ventilation-perfusion ratio?
 - (f) Mention the inulin clearance test for renal function.
 - (g) What is antibiotic sensitivity test?
 - (h) State the features of cat's cry syndrome.
 - (i) What is chloride shift?
 - (j) Mention the characteristics of anatomical dead space.

GROUP-B

Answer any three questions

10×3 = 30

2. (a) Discuss the mechanism of auto regulation of renal blood flow. 6
- (b) Mention the non-excretory functions of kidney. 4
3. Write short notes on: 2½×4 = 10
- (a) Type-II hypersensitivity
 - (b) AIDS
 - (c) HLA
 - (d) RIA.

4. (a) Mention the effects of hypoxia in the body. 3
(b) Discuss briefly the mechanics of breathing in human body. 7
5. (a) Make a comparative note on osmoregulation in mammals. 8
(b) What is bioluminescence? 2
6. (a) Describe the structure of cell wall of a bacteria. 7
(b) State the underlying biochemical basis of Gram staining. 3
7. Write short notes on: $2\frac{1}{2} \times 4 = 10$
(a) RTPCR
(b) Western blotting
(c) Klinefelter's syndrome
(d) Colour blindness.

GROUP-C

Answer any two questions

$15 \times 2 = 30$

8. (a) Discuss the bactericidal effects of alcohol and phenol. 3+2
(b) Write a note on different bacterial culture methods. 5
(c) Describe glyoxylate cycle along with its importance. 5
9. (a) Give a brief description about the centres for regulation of respiration. 5
(b) Discuss the chemical regulation of respiration. 6
(c) Mention the role of bicarbonate buffer to maintain the pH in our body. 4
- 10.(a) Discuss the uses of HAT medium with justification in hybridoma technology. 5
(b) Write a brief note on inborn errors of tyrosine metabolism. 5
(c) Give an account of Holiday Junction Model of genetic recombination. 5
- 11.(a) Discuss the mechanism of DNA replication in *E.coli*. 7
(b) What is genetic code? 3
(c) Discuss the mechanism of matched cohesive and ligation for insertion of foreign DNA into vector. 5

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