



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 5th Semester Examination, 2022

DSE-P1-PHYSIOLOGY

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

GROUP-A

1. Answer any **five** questions from the following: 1×5 = 5
- (a) What is Median?
 - (b) Define what do you mean by co-efficient of dispersion.
 - (c) What is standard score?
 - (d) What is probability distribution?
 - (e) Define what is variance.
 - (f) What is quota sampling? Give examples.
 - (g) Define what is linear and non-linear correlation.
 - (h) What is errors of inference?
 - (i) What are ogives?
 - (j) What are critical t-scores?

GROUP-B

Answer any three questions from the following 5×3 = 15

2. What is incidental sampling? Explain why a sample should be used, instead of the entire population for an experiment. 2+3
3. Describe the working out of a frequency distribution from raw scores of a continuous variable with appropriate example. 5
4. Describe the principal properties of Student's t-distributions. What are critical t-scores? 4+1
5. What is levels of significance? Discuss its relation with the errors of inference. 2+3

6. Why is the nonparametric chi-square test considered as an analysis of frequencies? 3+2
Mention its basic formula and properties.

GROUP-C

Answer any two questions from the following

10×2 = 20

7. Tabulate the following body weight (kg) data of a sample of humans into a frequency distribution having 5 suitable class intervals:

57, 78, 57, 72, 68, 68, 56, 79, 65, 71, 74, 71, 68, 67, 70, 74, 70, 59, 62, 64, 62, 65, 68, 61, 77, 58, 77, 65, 63, 73, 65, 63, 73, 64, 66, 64, 67, 73, 67.

8. Draw a multiple bar diagram to represent the following frequency distributions of phenotypes in two *Drosophila* samples from two habitats:

Phenotype Frequencies	Grey body red eye	Grey body scarlet eye	Black body red eye	Black body scarlet eye
Sample 1	90	28	32	10
Sample 2	80	35	35	10

9. Apply an appropriate t-test to find whether or not there is a significant difference between the mean inter-orbital widths (mm) of the following group of male and female pigeons:

Males	11.3	12.2	12.8	11.9	13.0	13.4	11.8	12.7	12.9	13.3	12.4
Females	10.5	10.0	10.4	11.0	10.9	10.7	11.3	10.8	10.2	11.5	

10. Out of 80 diabetic, 32 were found suffering from hypercholesterolemia, while the rest had normal serum cholesterol. Out of 70 non-diabetics, only 14 were hypercholesterolemic. Use chi-square test of independence to find if there is any significant association between diabetes and hypercholesterolemia.

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