



'সমানো মন্ত্র: সমিতি: সমানী'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 6th Semester Examination, 2023

CC14-ZOOLOGY

EVOLUTIONARY BIOLOGY AND BIostatISTICS

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any **five** of the following: 1×5 = 5
 - (a) Define parallel evolution.
 - (b) What is gene frequency?
 - (c) What is mutation pressure?
 - (d) What is panspermia?
 - (e) Define sibling species.
 - (f) Standard deviation is the square root of _____. (Fill in the blank)
 - (g) Why genetic drift is called non-directional force?
 - (h) Who is the proponent of morphospecies concept?

2. Answer any **three** of the following: 5×3 = 15
 - (a) Write a brief note on gradual speciation.
 - (b) Write a brief account on biological species concept and discuss its limitations. 3+2
 - (c) Discuss in brief about K-T extinction.
 - (d) What is migration and immigration? Discuss the role of migration in changing allelic frequency. 2+3
 - (e)

Observation	60	61	62	63	64	65	66
Frequency	1	3	2	5	7	2	1

3+2

From the above data set calculate mean and mode.

3. Answer any **two** questions: 10×2 = 20
 - (a) Define adaptive radiation. Elucidate the process of adaptive radiation with reference to the Galapagos finches. Add a note on the significance of adaptive radiation in evolution. 1+7+2

- (b) Describe the evolution of modern horse with reference to the modification in teeth and limb. Add a note on allometry. 8+2
- (c) Albino rats were administered with a drug (10 mg/kg/day) for 7 days. Initial and final body weights of the rats were recorded.

Rat no.	1	2	3	4	5	6	7	8	9	10
Initial body weight (in g)	110	115	102	98	112	110	97	120	102	110
Final body weight (in g)	109	116	100	95	108	112	98	115	98	111

Determine whether the drug has any significant effect on the body weight of rat.

- (d) Explain the term variation. Discuss its various types and their relative importance to the phenomenon of evolution. 3+3+4

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