



WEST BENGAL STATE UNIVERSITY
B.Sc. Honours 5th Semester Examination, 2021-22

PHYADSE01T-PHYSIOLOGY (DSE1/2)

BIOLOGICAL STATISTICS

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.
Candidates should answer in their own words and adhere to the word limit as practicable.*

Answer any five questions from the following

$8 \times 5 = 40$

1. (a) Define variables and parameter. 4+4
(b) What do you mean by sampling? Explain its importance in statistical analyses.

2. (a) What is data? 2+2+4
(b) Differentiate between quantitative and qualitative data.
(c) What are the importance of Histogram and Pie plots in statistics? Explain with examples.

3. (a) What is the importance of data frequency in statistics? 2+3+3
(b) Explain the importance of class or group in frequency calculation.
(c) How is data frequency represented graphically?

4. (a) What is descriptive statistics? 2+2+4
(b) Discuss its different components and elaborate on the importance of each of its components.

5. (a) What is 't' distribution? 2+2+4
(b) How does it differ from normal distribution? Comment.
(c) What is the difference between population mean and sample mean? Represent this diagrammatically.

6. (a) What are the differences between parametric and non-parametric statistics? 2+4+2
(b) Explain their importance citing one example of each type.
(c) What is meant by power of a statistical test?

- 7 .(a) Mention the experimental condition of performing one-tail and two-tail test. 2+2+4
(b) When is Z-test performed between two means of samples?
(c) The mean height of 25 male college students and 20 female college students are 4160 cm and 3222 cm. The sum of the squared deviations of scores of each sample from the corresponding sample of male and female students are 736.0 cm^2 and 349.8 cm^2 respectively. Find out whether there is any significant differences in mean of male and female college students. If yes, find out the level of significance from the following two-tail critical t scores.

$$t_{0.05(43)} = 2.017, t_{0.01(43)} = 2.695, t_{0.001(43)} = 3.532$$

8. Write short notes on: 4×2 = 8
(a) Multiplication rule of probability 4
(b) Null hypothesis. 4

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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