

U.G. 5th Semester Examination - 2024**PHYSIOLOGY****[HONOURS]****Discipline Specific Elective (DSE)****Course Code : PHYSIOL-H-DSE-T-01****Full Marks : 40****Time : $2\frac{1}{2}$ Hours***The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***GROUP-A****1. Answer any five from the following questions:****2×5=10**

- a) What is histogram?
- b) Define "level of significance".
- c) Define "degrees of freedom".
- d) What is random sampling?
- e) What do you mean by binomial distribution?
- f) State the difference between dependent and independent variables.
- g) Give examples of two non-parametric statistical tests.
- h) What is the significance of standard error in statistical analysis?

[Turn Over]

GROUP-B

2. Answer any two from the following questions:

$$5 \times 2 = 10$$

a) Describe Null Hypothesis in testing the significance of difference between means of two samples. 5

b) What is the difference between one-tail and two-tail test? What is student "t" test? 3+2=5

c) What is mode? Describe the procedure of computing mode from a frequency distribution with equal size of class interval. 1+4=5

d) Explain the difference between population and sample with suitable examples. 5

GROUP-C

3. Answer any two from the following questions:

$$10 \times 2 = 20$$

a) Explain the importance of statistics in designing a biological experiment. 10

b) Discuss the difference between parametric and non-parametric statistics with suitable example. When is "Chi-square test" used for analysis of biological data? 6+4=10

c) Draw a histogram for the following frequency distribution of body heights (cm) in a sample of school students: 10

Class interval:	151-160	161-165	166-170	171-175	176-180
Frequency:	5	25	20	10	4

d) Calculate the mean, standard deviation and standard error from the following frequency distribution of iron concentration ($\mu\text{g/dL}$) of 80 workers: 2+6+2=10

Class interval:	100-109	110-119	120-129	130-139	140-149	150-159	160-169
Frequency:	6	11	10	17	16	13	7