TH241141MINB

Reg. No.....

Name.....

FYUG PROGRAMME EXAMINATIONS, NOVEMBER 2024

(2024 Admission Regular)

SEMESTER I – MINOR B COURSE (STATISTICS)

ST1DSCB101B24 - BASIC STATISTICS

Time: 1.5 Hours **Maximum Mark: 50**

PART A

I.Answer all questions (MCQ). Each question carries 1 mark

Q.No:	QUESTIONS	CO	LEVEL
1.	Which of the following is an example of ratio data? 1. Height in meters 2. Student grades (A, B, C) 3. Country names 4. Temperature in Celsius		
2.	Which of the following represents discrete data? 1. Height 2. Number of students 3. Temperature 4. Time		
3.	The mean of the first four even numbers is: 1. 4 2. 5 3. 6 4. 7		
4.	Which graphical representation is best suited for showing categorical data? 1. Scatter plot 2. Line graph 3. Bar chart 4. Histogram		
5.	What is the variance of the numbers 2, 4, 6, 8? 1. 4 2. 8 3. 12 4. 16		

(5x1=5)

Q.No:	QUESTIONS	CO	LEVEL
6.	What is the formula to calculate the mean for grouped data (continuous or discrete)?		
7.	The level of measurement that has quantifiable, ordered, and equidistant properties but lacks true zero is known as the _____ level of measurement.		
8.	A sampling method where every member has an equal chance is called _____.		
9.	The range is the difference between the _____ and _____ values.		
10.	The most frequently occurring value is the _____.		

(5x1=5)

PART B

II. Answer any six questions in one paragraph. Each question carries 5 marks.

Q.No:	QUESTIONS	CO	LEVEL
11	In a group of 500 students, the weight of students is recorded as follows: Weight (kg) / Frequency 40-45 / 25 45-50 / 60 50-55 / 120 55-60 / 160 60-65 / 75 65-70 / 40 70-75 / 20 Draw a frequency polygon to represent the distribution of students' weights.		

12	A company records the monthly sales (in thousands of dollars) for 6 months as: 42, 38, 50, 55, 48, 45 Calculate the standard deviation to analyze the variability in sales.		
13	Briefly explain the difference between range and standard deviation.		
14	Briefly explain the following sampling methods: Simple Random Sampling, Stratified Sampling, Systematic Sampling.		
15	Find the quartile deviation for the following dataset: 12, 15, 18, 20, 22, 25, 28, 30, 32, 35		
16	Consider the following data for two different products based on their sales performance: **Metric** / **Product A** / **Product B** Mean Sales (units) / 80 / 120 Standard Deviation (units) / 20 / 30 Calculate the coefficient of variation for both Product A and Product B.		
17	The following data represents the scores of 50 students in a mathematics exam: **Score Range Frequency** 0-10 5 11-20 10 21-30 15 31-40 12 41-50 8 Draw a histogram to represent the frequency distribution of the scores.		
18	Compare and contrast pie-chart and bar graph.		

(6x5=30)

PART C

III.Answer any one question. The question carries 10 marks.

<table>
<tr><th>Q.No:</th><th>QUESTIONS</th><th>CO</th><th>LEVEL</th></tr>
<tr><td>19.</td><td>The following data represents the ages (in years) of 50 participants in a study:
<table><tr><th>Age Range (years)</th><th>Number of Participants</th></tr><tr><td>20-25</td><td>8</td></tr><tr><td>26-30</td><td>15</td></tr><tr><td>31-35</td><td>12</td></tr><tr><td>36-40</td><td>10</td></tr><tr><td>41-45</td><td>5</td></tr></table>Calculate the mean age, median age of the participants and determine the mode of the age distribution.</td><td></td><td></td></tr>
<tr><td>20.</td><td>The following data represents the number of hours spent on homework by 60 students:
<table><tr><th>Hours Spent</th><th>Number of Students</th></tr><tr><td>0-2</td><td>10</td></tr><tr><td>2-4</td><td>20</td></tr><tr><td>4-6</td><td>15</td></tr><tr><td>6-8</td><td>10</td></tr><tr><td>8-10</td><td>5</td></tr></table>Compute the standard deviation and coefficient of variation for the data.</td><td></td><td></td></tr>
</table>

(1x10=10)

CO : Course Outcomes Level : R – Remember, U – Understand, Ap- Apply, An- Analyze, E- Evaluate, C- Create