|  |  |  |  |  |  |  |  |  |  |  |  |  |
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 **PRESIDENCY UNIVERSITY**

  **Bengaluru**

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| --- |
| **End - Term Examinations – JANUARY 2025** |
| **Date:** 17 – 01- 2025 **Time:** 01:00 pm – 04:00 pm |

|  |  |
| --- | --- |
| **School:** SOC | **Program:** BCM/BCM-BA/BCM-CMA |
| **Course Code :** SOC2003 | **Course Name**: Business Statistics |
| **Semester**: I  | **Max Marks**:100 | **Weightage**:50% |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CO - Levels** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |
| **Marks** | **4** | **18** | **26** | **26** | **26** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Do not write anything on the question paper other than roll number.*

**Part A**

|  |  |  |
| --- | --- | --- |
| **Answer ALL the Questions. Each question carries 2 marks. (10Q x 2M = 20M)** | **Bloom's Level**  | **CO** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **1** | Write two advantages of Statistics? | **2 Marks** | **Remember** | **CO1** |
| **2** | Mention sources of primary data? | **2 Marks** | **Remember** | **CO1** |
| **3** | Write the formula for calculation of Harmonic Mean? | **2 Marks** | **Remember** | **CO2** |
| **4** | Write any two merits of Median? | **2 Marks** | **Remember** | **CO2** |
| **5** | What is dispersion? | **2 Marks** | **Remember** | **CO3** |
| **6** | Write the formula for calculation of Coefficient of Variation? | **2 Marks** | **Remember** | **CO3** |
| **7** | Write two regression lines? | **2 Marks** | **Remember** | **CO4** |
| **8** | What is meant by ‘Regression’? | **2 Marks** | **Remember** | **CO4** |
| **9** | What is an Index Number? | **2 Marks** | **Remember** | **CO5** |
| **10** | Explain TRT? | **2 Marks** | **Remember** | **CO5** |

**Part B**

|  |  |  |
| --- | --- | --- |
| **Answer ALL the Questions. Each question carries 7 marks. (5Q x 7M = 35M)** | **Bloom's Level**  | **CO** |
| **11** |  | The profit earned by 100 companies is given below. Calculate Arithmetic Mean

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Profits (in lakhs) | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 |
| No. of companies | 4 | 8 | 18 | 30 | 15 | 10 | 8 | 7 |

  | **7 Marks** | **Apply** | **CO2** |
|  | **Or** |
| **12** |  | Calculate the Harmonic mean for the following frequency distribution.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| C-I | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
| f | 8 | 12 | 20 | 6 | 4 |

  | **7 Marks** | **Apply** | **CO2** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **13** |  | Calculate coefficient of M.D from mean for the following data.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| x | 5 | 6 | 7 | 8 | 9 | 10 |
| f | 8 | 12 | 18 | 8 | 2 | 1 |

  | **7 Marks** | **Apply** | **CO3** |
|  | **Or** |
| **14** |  | The mean and S.D of a distribution of 100 and 150 items are 50, 5 and 40, 6 respectively. Find the standard deviation of all the 250 items taken together? | **7 Marks** | **Understand** | **CO3** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **15** |  | Compute the regression equation of Y on X from the following data.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| x | 2 | 4 | 5 | 6 | 8 | 11 |
| y | 18 | 12 | 10 | 8 | 7 | 5 |

  | **7 Marks** | **Apply** | **CO4** |
|  | **Or** |
| **16** |  | Following are the sales statistics of 6 sales representatives in two different weeks. Find Spearman’s coefficient of rank correlation.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SR | 1 | 2 | 3 | 4 | 5 | 6 |
| I Week SALES | 60 | 110 | 65 | 40 | 70 | 20 |
| II | 90 | 100 | 80 | 30 | 70 | 20 |

  | **7 Marks** | **Understand** | **CO4** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **17** |  | A family budget enquiry revealed that the average expenditure of the families on food, clothing, house rent, fuel and misc. are 30%, 10% 20% 20% and 20% respectively. If the respective group indices are 130, 170, 160, 200 and 180. Find the consumer price index number.  | **7 Marks** | **Understand** | **CO5** |
|  | **Or** |
| **18** |  | Draw a histogram for the following data and hence locate the value of mode.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks | 0-5 | 5-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-70 | 70-80 |
| No. of students | 2 | 6 | 8 | 25 | 40 | 30 | 20 | 8 |

 | **7 Marks** | **Understand** | **CO5** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **19** |  | Verify Laspeyre’s price index number satisfy TRT& FRT  | **7 Marks** | **Understand** | **CO5** |
|  | **Or** |
| **20** |  | Draw pie diagram

|  |  |
| --- | --- |
| Sources | Revenue( in crore) |
| Customs | 60 |
| Excise | 120 |
| Income tax | 65 |
| Corporate Tax | 70 |
| Miscellaneous | 45 |
|  TOTAL | 360 |

  | **7 Marks** | **Understand** | **CO5** |

**Part C**

|  |  |  |
| --- | --- | --- |
| **Answer Any THREE Questions. Each question carries 15 marks. (3Q x 15M = 45M)** | **Bloom's Level**  | **CO** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **21** |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| x | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| f | 3 | 8 | 10 | 12 | 16 | 14 | 10 | 8 | 7 | 5 |

Calculate Mean, Median and Mode | **15 Marks** | **Apply** | **CO2** |
| **22** | Find the standard deviation and coefficient of variance from the following data

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| C.I | 0-6 | 6-12 | 12-18 | 18-24 | 24-30 | 30-36 | 36-42 |
| f | 20 | 25 | 35 | 70 | 50 | 40 | 30 |

 | **15 Marks** | **Apply** | **CO3** |
| **23** | Calculate karl-pearson’s coefficient of correlations for the following data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x/y | 20-30 | 30-40 | 40-50 | 50-60 |
| 10-14 | 10 | 10 | - | - |
| 14-18 | - | 20 | 8 | - |
| 18-22 | - | 10 | 25 | 6 |
| 22-26 | - | - | 7 | 4 |

 | **15 Marks** | **Apply** | **CO4** |
| **24** | Compute Laspeyre’s Paasche’s Marshall-Edworth’s, Dorbish-Bowley’s and Fisher’s price index number from the following data.

|  |  |  |
| --- | --- | --- |
| Items | 2006 | 2010 |
|  | Price (Rs) | Quantity | Price( Rs) | Quantity |
| A | 7 | 50 | 10 | 60 |
| B | 5 | 80 | 5 | 100 |
| C | 8 | 70 | 9 | 60 |
| D | 4 | 30 | 7 | 50 |

 | **15 Marks** | **Apply** | **CO5** |

**\*\*\*\*\* BEST WISHES \*\*\*\*\***