 University of Kerala  
 UoK -FYUGP

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| University of Kerala | | |
| Discipline: STATISTICS |  | Time: 1 Hour 30 Minutes (90 Mins.) |
| Course Code: UK1DSCSTA106 |  | Total Marks: 42 |
| Course Title: ELEMENTS OF STATISTICAL THEORY |  |  |
| Type of Course: DSC |  |  |
| Semester: 1 |  |  |
| Academic Level: 100-199 |  |  |
| Total Credit: 4, Theory: 3 Credit |  |  |

**Part A**. 6 Marks. Time: 6 Minutes  
Objective Type. 1 Mark Each. Answer All Questions

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| Qn. No. | Question | Cognitive Level | Course Outcome (CO) |
| 1. | The document that outlines the rationale, design, methodology, and analysis plan for a clinical trial is called the \_\_\_\_\_\_\_\_\_\_. | Remember | CO5 |
| 2. | ------------- is data collected firsthand for a specific purpose. | Remember | CO1 |
| 3. | In a pie diagram, …………… of each slice represents the proportion of that category compared to the total. | Understand | CO2 |
| 4. | In a symmetric distribution, the mean, median, and mode are all located at the \_\_\_\_\_\_\_\_\_\_. | Understand | CO3 |
| 5. | For a perfect positive linear relationship the correlation coefficient is ------------ | Understand | CO4 |
| 6. | The measure of variability that is defined as the difference between the highest and lowest values in a dataset is called the \_\_\_\_\_\_\_\_\_\_. | Understand | CO3 |

**Part B.** 8 Marks. Time: 24 Minutes  
Short Answer. 2 Marks Each. Answer All Questions

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| Qn. No. | Question | Cognitive Level | Course Outcome (CO) |
| 7. | Discuss the importance of patient selection criteria in clinical trials. | Understand | CO5 |
| 8. | What are the four classifications of data? | Understand | CO1 |
| 9. | Explain the purpose of a frequency table in data analysis | Apply | CO2 |
| 10. | Explain how you would calculate the variance and standard deviation? | Apply | CO3 |

**Part C.** 28 Marks. Time: 60 Minutes  
Long Answer. 7 marks each. Answer all 4 Questions, choosing among options within each question.

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| Qn. No. | Question | Cognitive Level | Course Outcome (CO) |
| 11. | A. Explain the difference between bar diagram and pie diagram  OR | Apply | CO2 |
| B. In a study of 90 adults’ travel preferences, the results were subdivided into modes of transport and vacation types:  Transport: Car (40), Bicycle (15), Public Transport (20), Walking (15)  Vacation Types: Beach (30), Mountains (25), City (20), Countryside (15)  Draw a bar diagram to represent the transport modes | Apply | CO2 |
| 12. | Analyse the consistency of the data  A: 30,28,25,22,20  B: 15,50,20,28,35,40 | Analyze | CO3 |
| Calculate mean deviation about mean for the following data,70,  50,55,65,75,85,80,90,85 | Analyze | CO3 |
| 13. | Calculate the correlation coefficient and interpret its significance.  X:15,20,25,30,35  Y: 20,50,70,100,130 | Evaluate | CO4 |
| Fit a straight line y= aX+b  X:1,2,3,4,5  Y:2,4,3,5,8 | Evaluate | CO4 |
| 14. | For the dataset 30, 32, 32, 35, 38, 40, 42, what can you infer about the skewness of the distribution? | Evaluate | CO3 |
| Given the ages of 10 participants in a study: 22, 24, 24, 26, 30, 30, 31, 33, 34, 36. Evaluate the variance of the data | Evaluate | CO3 |

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| Cognitive Level | Marks | Percentage |
| Remember | 2 | 4.8 |
| Understand | 8 | 19.0 |
| Apply | 11 | 26.2 |
| Analyse | 7 | 16.7 |
| Evaluate | 14 | 33.3 |
| Create | 0 | 0 |
| TOTAL | 42 | 100 |

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| Course Outcomes | Marks | Percentage |
| CO1 | 3 | 7.1 |
| CO2 | 10 | 23.8 |
| CO3 | 18 | 42.8 |
| CO4 | 8 | 19.04 |
| CO5 | 3 | 7.1 |
| TOTAL | 42 | 100 |