School of Biological and Life sciences

Master of Science in Biochemistry
Semester End Examination - Jun 2024

Duration : 180 Minutes
Max Marks : 100

Sem II - P1PT204T - MBS28T2111 - Research Methodology

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1)	What are the key features of a good research design?	K1(2)
2)	Differentiate between sampling error and non-sampling error. Provide examples of non-sampling errors such as coverage error, non-response error, and measurement error, and discuss their impact on the validity of survey results.	K2(4)
3)	Discuss the importance of conducting incidence and prevalence studies in public health research. Highlight how these studies contribute to understanding disease burden, planning interventions, and evaluating healthcare programs.	K2(6)
4)	Compare and contrast qualitative and quantitative methods of data collection. Provide examples of research scenarios where each approach would be most suitable, and justify your choices.	K3(9)
5)	The weights (in kilograms) of 5 apples are 150, 160, 155, 165, and 170. Calculate the population mean weight of these apples.	K3(9)
6)	Explain how the level of significance is related to the confidence level in confidence intervals. Discuss the interpretation of a 95% confidence interval in relation to a significance level of $\alpha = 0.05$.	K5(10)
7)	A researcher claims that the average score on a standardized test is 75. A random sample of 150 test takers is selected, and the sample mean score is found to be 73 with a standard deviation of 8. Conduct a hypothesis test to determine if there is sufficient evidence to support the researcher's claim at a significance level of $\alpha = 0.10$.	K4(12)
8)	State requirements of a good measure of central tendency.	K5(15)
9)	Describe the interpretation of a 95% confidence interval. What does it mean to say that we are 95% confident that the interval contains the true population parameter?	K5(15)
10)	Define mode. What is the relationship between median, mean and mode? The mean monthly salary paid to 300 employees of a firm is Rs. 1470. There are 200 male employees & the remaining are females. If mean salary of males is Rs. 1505, obtain the mean salary of females.	K6(18)