

Name. _____		Printed Pages:01		
Student Admn. No.: _____				
School of Biological and Life Sciences Summer Term Examination – July - August 2024 [Programme: M.Sc. Microbiology/ Zoology] [Semester: II] [Batch:2023-2025]				
Course Title: Research Methodology		Max Marks: 100		
Course Code: P1PT204T		Time: 3 Hrs.		
Instructions:	1. All questions are compulsory. 2. Assume missing data suitably, if any.			
		K Level	COs	Marks
SECTION-A (15 Marks)		5 Marks each		
1.	What are the key components that should be included in a synopsis writing, and how do they differ from those in a typical summary or abstract?	KL1	CO1	5
2.	What factors might influence the choice of a particular sampling method in a research study?	KL1	CO2	5
3.	Define incidence and prevalence in epidemiological studies. Explain how these measures differ and provide examples to illustrate their distinctions.	KL2	CO3	5
SECTION-B (40 Marks)		10 Marks each		
4.	Discuss the significance of literature review in the context of writing a research paper or thesis. How can writers effectively synthesize existing literature to support their own research objectives and findings?	KL3	CO1	10
5.	Assess the generalizability of research findings obtained using probability sampling versus non-probability sampling.	KL3	CO2	10
6.	Calculate the first quartile (Q1), third quartile (Q3), and the median (Q2) for the dataset: 15, 18, 20, 22, 25, 26, 28, 30, 32, 35.	KL3	CO4	10
7.	Discuss factors to consider when determining an appropriate level of significance for a hypothesis test. Explain how sample size, effect size, and the consequences of Type I and Type II errors influence the choice of significance level.	KL4	CO5	10
SECTION-C (45 Marks)		15 Marks each		
8.	Explore the concept of weighted central tendency measures in biostatistics, explaining how weighting factors influence the calculation of mean, median, and mode and providing examples of their application in biomedical research.	KL4	CO3	15
9.	Compare and contrast the assumptions underlying the t-test, Z-test, and F-test. Discuss how violations of these assumptions may impact the validity of test results and the interpretation of statistical findings.	KL4	CO4	15
10.	Explain the concept of standard error in statistics. How does it differ from standard deviation? Given a sample of 100 students, with a mean exam score of 75 and a standard deviation of 10, calculate the standard error of the mean (SEM). Then, using the SEM, determine the 95% confidence interval for the population mean exam score.	KL5	CO5	15