

PG CBCS
M.SC. Semester-III Examination 2021
MEDICAL LABORATORY TECHNOLOGY
PAPER: MLT 301
(RESEARCH METHODOLOGY & BIostatISTICS USING COMPUTER SOFTWARES)

Full Marks: 40**Time: 2 Hours****Answer any FOUR questions of the following:****10X4=40**

1. What is the importance of chi-square test?

Find out whether or not significance association between diabetes and hypertension, when 30 are hypertensive out of 70 diabetes individuals, whereas out of 60 are non-diabetic out of 20 hypertensive with using the selected critical chi-square value as given below.

$$\text{Critical } \chi^2_{0.02(3)} = 9.84, \quad \chi^2_{0.02(2)} = 7.82, \quad \chi^2_{0.02(1)} = 5.41 \quad 3+7$$

2. Differentiate between Skewness and Kurtosis with their computation formulae.

Compute the mean, median and variance of the following sets of body wt.(Kg) scores:

Class Interval: 40-44, 45-49, 50-54, 55-60, 60-64

Frequencies: 6, 7, 25, 7, 4

4+6

3. Why ANOVA is more preferable than t-test? Classify with examples of ANOVA and write the computation of sum of squares, variances and 'F' ratio for multiple comparison of 3 set of sample means of a variable. 2+2+6

4. Write the different assumptions for student t-test and write the computed formulae of equal and unequal 'df'. Calculate computed z-value, when sample mean =50Kg, population mean = 55kg and SE= 2.553 and justify the nutritional status. (2+2)+(4+2)

5. Write the different sequential steps for polygon graph of group sample in a variable with example. State about the contingency table with a suitable example and consider the computation of expected frequency (f_e). 5+5

6. Define PERT chart. What do you mean by plagiarism in research? Explain the basic research ethics that should be maintained to carry out the research proposal. 2+2+6

7. Write the different features of qualitative and quantitative research. State the case control study with one example. 5+5

8. Define Pilot project. Write the difference sources of review literature. What is H index? 3+4+3

9. State the steps adopted for the writing of a good research proposal for funding. 10

10. What do you mean by quasi experiment at research? Discuss about the probability sampling with special reference to stratified sampling. 4+6