

Roll No \_\_\_\_\_

**RE-APPEAR, EXAMINATION  
DEC-2024**



**K.R. MANGALAM UNIVERSITY**  
THE COMPLETE WORLD OF EDUCATION

**Course Code : BP801T      Course Name: Biostatistics and Research Methodology**  
**Programme Name: B.Pharm      Sem:8<sup>th</sup>**

**Time:2.5Hours**

**Maximum Marks: 75**

**Instructions:** The question paper consists of 32 questions divided into three-part A, B and C. Attempt all questions from section-A comprises 20 MCQs, Any two questions out of three from section-B and Any seven questions out of Nine from section-C

**Section-A (20 X 1 = 20 Marks)**

|    |                                                                                                                                                                                                                                                                              |      |       |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|
| 1  | The application of statistical method in biology is called-<br>(a) Statics in biology (b) Statics in Vivo (c) Biostatistics (d) All of this                                                                                                                                  | CO-1 | L-I   |
| 2  | Who is regarded as father of as biostatistics-<br>(a) Fisher (b) Karl Pearson (c) Francis Galton (d) Francis bacon                                                                                                                                                           | CO-1 | L-II  |
| 3  | The term biometric was coined by –<br>(a) Fischer Karl Pearson (b) Water Beldon<br>(c) Both a and b (d) Francis Galton                                                                                                                                                       | CO-1 | L-II  |
| 4  | The branch of biostatic that deal with method of collection organization and presentation of data is called as –<br>(a) Inferential biostatistics (b) Descriptive biostatistics<br>(c) Both and comparative (d) Biostatistics                                                | CO-1 | L-II  |
| 5  | In biostatistics group of individuals taken for study is called-<br>(a) Block (b) Population (c) Group (d) Flock                                                                                                                                                             | CO-2 | L-II  |
| 6  | The word statics in German means-<br>(a) Calculations (b) Government (c) Mathematics (d) Classification                                                                                                                                                                      | CO-2 | L-II  |
| 7  | Biostatistics is also called as-<br>(a) Statistics in biology (b) Bionemorology<br>(c) Biometry (d) Both A and B                                                                                                                                                             | CO-2 | L-I   |
| 8  | The characteristics or quantity that may vary from one individual to another is called-<br>(a) Static group (b) Variables (c) Dynamic group (d) Dynamism                                                                                                                     | CO-2 | L-II  |
| 9  | Variable whose value can be expressed numerically are called-<br>(a) Quantitative variables (b) Qualitative variables<br>(c) Absolute variables (d) Continuous variables                                                                                                     | CO-3 | L-III |
| 10 | Chi square test-<br>(a) Measure the degree of deviation experimental results from the expected results<br>(b) To test the closeness of observed and expected results<br>(c) To test the population variances and test variances<br>(d) All the above                         | CO-3 | L-IV  |
| 11 | Find the mode of the following 11, 12, 13, 14-<br>(a) 11 (b) 12 (c) 13 (d) 1                                                                                                                                                                                                 | CO-3 | L-IV  |
| 12 | Which of the following is not measure of Central tendency-<br>(a) Mean (b) Mode (c) Median (d) Range                                                                                                                                                                         | CO-3 | L-III |
| 13 | Standard deviation is the square of-<br>(a) Mean mode (b) Standard error (c) Variance (d) Regression                                                                                                                                                                         | CO-4 | L-III |
| 14 | Correlation coefficient is a number between-<br>(a) 1 and 2 (b) 0 and 1 (c) 1 and 0 (d) -1 and +1                                                                                                                                                                            | CO-4 | L-I   |
| 15 | CHI square is zero when-<br>(a) Expected frequency is lesser than observed frequency<br>(b) Expected frequency is equal to observed frequency<br>(c) Expected frequency is double of the observed frequency<br>(d) Expected frequency is greater than the observed frequency | CO-4 | L-III |
| 16 | A circle divided into sectors proportional to the frequency of item shown is called-<br>(a) Bar chart (b) Pie chart (c) Histogram (d) Frequency polygon                                                                                                                      | CO-4 | L-IV  |

|    |                                                                                                                                                                                                                               |      |       |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|
| 17 | A statistical test can be utilised to validate the statement peoples having high cholesterol suffer more from hypertension-<br>(a) A student test (b) Deregulation analysis<br>(c) Pearson correlation coefficient (d) Annova | CO-5 | L-II  |
| 18 | To determine variation in wings length of butterfly from five different places would be best statically test<br>(a) F test (b) Student test<br>(c) Regression analysis (d) Chi square test                                    | CO-5 | L-IV  |
| 19 | Height of student in a class is a-<br>(a) Quantitative variables (b) Discrete variables<br>(c) Absolute variables (d) Continuous variables                                                                                    | CO-5 | L-III |
| 20 | Number of fruits in a tree is a-<br>(a) Quantitative variables (b) Discrete variables<br>(c) Absolute variables (d) Continuous variables                                                                                      | CO-5 | L-III |

**Section B (2 X 10 = 20 Marks)**

|   |                                                                                                                      |       |       |       |       |       |       |       |      |       |
|---|----------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| 1 | Write a short note on<br>(i) Descriptive and Inferential Statistics<br>(ii) Probability and non-probability sampling |       |       |       |       |       |       |       | CO-1 | L-I   |
| 2 | Explain in detail factorial design and advantages of factorial design.                                               |       |       |       |       |       |       |       | CO-2 | L-II  |
| 3 | Find the mean, median and mode from the following data:                                                              |       |       |       |       |       |       |       | CO-3 | L-III |
|   | Age Group                                                                                                            | 25-30 | 30-35 | 35-40 | 40-45 | 45-50 | 50-55 | 55-60 |      |       |
|   | No. of Patients                                                                                                      | 4     | 3     | 2     | 3     | 4     | 8     | 6     |      |       |

**Section B (7 X 5 = 35 Marks)**

|   |                                                                                                                                                         |      |      |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|
| 1 | What is Probability? Differentiate between binomial and poisson distribution?                                                                           | CO-4 | L-I  |
| 2 | Write a detailed note on Plagiarism                                                                                                                     | CO-4 | L-II |
| 3 | Describe Cohort and Observational studies.                                                                                                              | CO-5 | L-II |
| 4 | Explain curve fitting method of least square                                                                                                            | CO-5 | L-II |
| 5 | Distinguish between sampling and population. What are advantages and limitations of sampling .                                                          | CO-1 | L-I  |
| 6 | Define Skewness. Draw the sketch of a skewed frequency distribution and show the position of the mean, median and mode when distribution is asymmetric. | CO-2 | L-II |
| 7 | Briefly describe ORANGE book.                                                                                                                           | CO-3 | L-II |
| 8 | What are the two broad categories of research studies.                                                                                                  | CO-4 | L-I  |
| 9 | What do you mean by historical design?                                                                                                                  | CO-5 | L-I  |