

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086.

COURSE CODE: 19BA/AC/BS35

B.B.A DEGREE EXAMINATION – NOVEMBER 2021

BUSINESS ADMINISTRATION

COURSE : ALLIED – CORE

PAPER : BUSINESS STATISTICS

TIME : 3 HOURS

MAX. MARKS: 100

SECTION – A

Answer all the questions:

(3 x 4 = 12)

1. What is meant by Type I and Type II Error
2. Prepare histogram for the following data

Wages	325-350	350-375	375-400	400-425	425-450
Frequency	30	45	75	60	35

3. In the binomial distribution, the probability of success is $\frac{2}{3}$ and $n=72$; find the mean and standard deviation.

SECTION – B

Answer any THREE questions:

(3 x 16 = 48)

4. A random sample consisting 4 students of class XII is taken from each of the different schools P, Q and R. The results of the test on mathematics is given below:

P	Q	R
71	90	72
75	80	77
65	86	76
69	84	79

Make the analysis of the variance (one way ANOVA) of the results. Use short cut method taking 80 as common under coding of the data.

5. **a.** If the probability is 0.7 that a student with high grades will get into law school, in binomial distribution what is the probability that three out of five students with very high grades will get into law school? (5 Marks)
b. The number of minor injuries a football coach can expect during the course of a game is a random variable having Poisson distribution with $\lambda=4.4$. Find the probability that during the course of a game there will be at the most three minor injuries. (11 marks)
6. **a.** Comment on the statement “Correlation measures the cause and effect of relationship between variables” (4 Marks)
b. If $r_{12}=0.8$; $r_{13}=0.4$; $r_{23}=0.56$. Calculate $r_{12.3}$; $r_{13.2}$ and $r_{23.1}$ (6 Marks)
c. The simple correlation coefficients between temperature(X_1), corn yield (X_2) and rainfall (X_3) are $r_{12}=0.59$; $r_{13}=0.46$; $r_{23}=0.77$. Calculate the multiple correlation $R_{1.23}$; $R_{2.13}$ and $R_{3.12}$ (6 Marks)

7. In an experiment to study the dependence of hypertension on smoking habits, the following data were taken from 180 individuals.

	Non- smokers	Moderate smokers	Heavy smokers	Total
Hypertension	21	36	30	87
No-hypertension	48	26	19	93
Total	69	62	49	180

Using Chi- Square distribution test the hypothesis at 0.5 level of significance that the presence or absence of hypertension is independent of smoking habits.

SECTION – C

Answer any ONE question:

(1 x 40 = 40)

8. Calculate and interpret Karl Pearson's Coefficient of Skewness of the marks of 59 students in Accounts as given below:

Marks group	No. of Students
0-10	4
10-20	8
20-30	11
30-40	15
40-50	12
50-60	6
60-70	3

9. The following table shows the ages (X) and blood pressure (Y) of 8 persons:

X	52	63	45	36	72	65	47	25
Y	62	53	51	25	79	43	60	33

- A. Attain the two regression equations using the method deviations from arithmetic mean (actual mean) of X and Y (24 Marks)
- B. Interpret the two regression equations. (8 Marks)
- C. Find the expected blood pressure of a 49-year-old person (4 Marks)
- D. Find the expected age of the person with blood pressure 70 (4 Marks)