K26U 0830

Reg. No. : .....

Name : .....

Second Semester B.Com./B.Com. (Logistics) (C.B.C.S.S. – O.B.E. – Supplementary) Degree Examination, April 2026
(2020 to 2023 Admissions)
Complementary Elective Course
2C01 COM : QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

Time : 3 Hours Max. Marks : 40

PART – A

Answer **any six** questions from the following. **Each** question carries **1** mark.

1. What is meant by the null hypothesis ?
2. State Bayes theorem.
3. What do you mean by seasonal variation ?
4. State the addition theorem of probability.
5. How will you interpret the value of 'r' ?
6. If one card is drawn from a pack of 52 cards at random, what is the chance that it is a King or Queen ?
7. The covariance and coefficient of correlation between two variables X and Y is 36 and .048 respectively. If the variance of X is 16, find the standard deviation of Y.
8. Differentiate between type I error and type II error. **(6×1=6)**

PART – B

Answer **any six** questions from the following. **Each** question carries **3** marks.

9. Differentiate between correlation and regression.

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10. Formulate an appropriate regression equation from the following data :

X-Independent Variable	2	4	5	6	8	11
Y-Dependent Variable	18	12	10	8	7	5

11. A sample of 16 MBA students of an institute have a mean starting salary of Rs. 30,200 per month with a standard deviation of Rs. 960. Using a 5% level of significance, can you conclude that this average salary is different from past average salary of Rs. 30,000 ? Use t-test. (t value for 15 degree of freedom at 5% level of significance-2.131).

12. From the following data find trend values using 3 year moving average method.

Year	2010	2011	2012	2013	2014	2015	2016	2017
Sales ('000)	40	42	40	44	49	46	42	44

13. Marketing Manager of a company wants to know the customer preference for the 4 new products. A random sample of 113 customers gave the following data :

Product	A	B	C	D
No. of customers preferring the product	30	36	25	22

Test the hypothesis, H_0 = A=B=C=D

(Critical value of χ^2 for 3 degree of freedom at 0.05 level of significance=7.815).

14. A box contains 8 red balls and 4 black balls. 5 balls are drawn at random. What is the probability that 3 of them are red and 2 are black ?

15. From the following data compute Spearman's rank correlation coefficient.

X	75	99	111	71	66	86	89	60
Y	120	132	169	101	89	151	159	84

16. Differentiate between Binomial distribution and Poisson distribution. **(6×3=18)**

PART – C

Answer **any two** questions from the following. **Each** question carries **8** marks.

17. The following table gives the distribution of the number of items produced and relative numbers of defective items among them according to the size of product items.

Size of items	15 – 16	16 – 17	17 – 18	18 – 19	19 – 20	20 – 21
No. of items	200	270	340	360	400	300
No. of defective items	150	162	170	180	180	114

Find Pearson's coefficient of correlation between size and percentage of the defect in quality.

18. A steel manufacturing company has the following time series of steel production (in metric ton)

Year	2015	2016	2017	2018	2019	2020	2021
Production	80	90	92	83	94	89	92

You are required to :

i) Find a linear equation that describes the trend in the production of steel by the company.

ii) Estimate the production in 2025, assuming that the same rate of change continues.

19. Define hypothesis. Describe various steps involved in the testing of the hypothesis. **(2×8=16)**