K21U 3442

Reg. No. : ....

Name : ....

II Semester B.Com. Degree (CBCSS-OBE-Reg./Sup./Imp.)
Examination, April 2021
(2019 Admission Onwards)
Complementary Elective Course
2C01COM – 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. Define Hypothesis.

2. Mention any two characteristics of Chi-square test.

3. A box contain 10 tickets each numbered 1 to 10. A ticket is drawn, what is the sample space ?

4. What is Binomial Distribution ?

5. A can kill a bird once in three shots. On this assumption he fires three shots. Find the probability that the bird is not killed.

6. Define nPr.

7. What is Perfect correlation ?

8. What is "Theorem of Inverse Probability" ?   (6×1=6)

PART – B

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

9. In how many ways can 3 girls and 5 boys be arranged in a row so that all the 3 girls are together ?

10. From the following information set up two regression equations and also find out coefficient of correlation between X and Y. $\Sigma X = 120$; $\Sigma Y = 432$; $\Sigma XY = 4992$; $\Sigma X2 = 1392$; $\Sigma Y2 = 18252$; $N = 12$.

11. Following are the figures of sales for the past ten years. Determine the trend line by the Free-Hand Curve method

Year	1	2	3	4	5	6
Sales	80	115	105	135	125	150

(unit in Lakhs)

12. Comment on the following results. For a bivariate distribution,

   1) Coefficient of Regression of y on x is 4.2 and coefficient of regression of x on y is 0.50.

   2) $bxy = -0.82$ and $byx = 0.25$.

13. In a certain sample of 2000 families, 1400 families are consumers of tea. Out of 1800 Hindu Families, 1236 families consume tea. Use Chi-Square test and state there is any significant difference between consumption of tea among Hindu and Non-Hindu Families.

14. Distinguish between Type I error and Type II error.

15. Godrej soap manufacturing company was distributing a particular brand of soap through a large number of retail shops. Before a heavy advertisement campaign, the mean sale per week per shop was 140 dozens. After the campaign a sample of 26 shops was taken and the mean sale was found to be 147 dozens with standard deviation 16. Can you consider the advertisement effective ?

16. State the 'Multiplication theorem' of probability with suitable example.   (6×3=18)

PART – C

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

17. What do you mean by testing of Hypothesis ? Explain its Procedure.

18. Fit a straight-line trend equation by the method of least squares and estimate the trend values. Also estimate the value of the year 2018.

Year	2008	2009	2010	2011	2012	2013	2014	2015
Value	80	90	92	83	94	99	92	104

19. A box of nine golf gloves contain two left handed and seven right handed gloves

   i) If two gloves are randomly selected from the box without replacement, what is the probability that (a) both gloves are right handed and (b) one is left handed and one is right handed glove ?

   ii) If three gloves are selected without replacement, what is the probability that all of them are left handed ?

   iii) If two gloves are selected with replacement, what is the probability that all of them are right-handed ?

                                               (2×8=16)