18U443 (Pages: 3) Name: …….

Reg. No...……

FOURTH SEMESTER B.Com. DEGREE EXAMINATION, APRIL 2020

(CUCBCSS-UG)

(Regular/Supplementary/Improvement)

CC15U BC4 C04/CC16U BC4 C04/CC17U BC4 C04 -

QUANTITATIVE TECHNIQUES FOR BUSINESS

(Complementary Course)

(2015 Admission onwards)

Time: Three Hours Maximum: 80 Marks

Part A

Answer ***all*** questions. Each question carries 1 mark.

I. Fill in the blanks:

1. For a normal distribution, mean = _____
2. _____ is called the probability of rejecting a true null hypothesis.
3. The two regression lines are mutually perpendicular when r = _____
4. When 4 coins are tossed, the total number of possible outcomes is _____
5. _____ is a statistical measure for testing the reliability of coefficient of correlation.

II. Choose the correct answer:

6. The coefficients of correlation and regression of 2 variables will be same, if their _____are same.

   (a) Arithmetic means (b) Standard deviations

   (c) Mean deviations (d) None of these

7. When two dies are thrown, the probability of getting a sum of 3 is _____

   (a) 1/36 (b) 1/18 (c) 1/12 (d) 1/9

8. In a _____ distribution, mean and variance are same.

   (a) Binomial (b) Poisson (c) Normal (d) Gamma

9. Student's t-test was developed by _____

   (a) Karl Pearson (b) R A Fisher (c) William Gosset (d) Prof. Bernoulli

10. Coefficient of determination is the _____of the two regression coefficients

    (a) Arithmetic mean (b) Geometric Mean (c) Product (d) None of these

(10 x 1 = 10 Marks)

Part B

Answer any ***eight*** questions. Each question carries 2 marks.

11. If P(A) = 1/13, P(B) = ¼ and P(A∩B) = 1/52, find: (i) P(A/B) and (ii) P(B/A)
12. In a correlation analysis, if r = 0.64 and PE = 0.1312, find the number of pairs of observations.
13. Explain the addition theorem of probability.
14. A card is dawn from a well shuffled pack of cards and a gambler bets that it is a spade or an ace. What are the odds against his winning in the bet?
15. How many words can be formed with the letters of the word "COMMERCE"?
16. "For a Binomial Distribution, the mean = 10 and the standard deviation = 4". Comment on the statement.
17. For a normal distribution of variable X, the value of $\mu = 200$ and $\sigma = 25$. Find the probability that X assumes a value greater than 240.
18. What do you mean by degree of freedom?
19. What are the important uses of Chi-square test?
20. What are the important limitations of quantitative techniques?

(8 x 2 = 16 Marks)

Part C

Answer any ***six*** questions. Each question carries 4 marks.

21. State any eight properties of standard normal distribution.
22. If two regression equations are 5x – 4y + 20 = 0 and 2x – 5y + 110 = 0, and S D of x = 10, find: (a) mean of x and y (b) Coefficient of correlation (c) S D of y
23. Explain the importance of quantitative techniques in business.
24. Bag A contains 4 white and 3 green balls and bag B contains 2 white and 5 green balls. One of the bags is to be chosen at random and a ball is to be selected from the chosen bag. What is the probability of drawing a white ball?
25. The number of accidents in a year attributed to bus drivers in a district follows Poisson distribution with mean 3. Out of 1000 bus drivers, find approximately the number of drivers with (a) no accidents in a year (b) more than 3 accidents in a year.
26. The heights of 1000 cakes baked with a certain mix have a normal distribution with mean of 5.75 cm and S.D of 0.75 cm. Find the maximum height of the flattest 200 cakes.
27. Distinguish between Correlation analysis and Regression analysis.
28. In a sample study about the coffee habit in a town, following data were observed in a sample of size 100:

    46 were male, 26 were coffee drinkers and 17 were male coffee drinkers. Test whether there is any association between gender and coffee habits.

(6 x 4 = 24 Marks)

Part D

Answer any ***two*** questions. Each question carries 15 marks.

29. The following table shows the yield of three varieties of wheat obtained from different plots:

Varieties	Yields				
X	51	47	37	48	42
Y	44	35	41	36	
Z	30	27	42		

Test whether there is significant difference among the varieties.

30. Following table shows the figures of import and export (in thousand tones) of a country for the period from 2011 to 2018:

Year	2011	2012	2013	2014	2015	2016	2017	2018
Imports	46	68	72	75	80	70	93	100
Exports	64	50	39	48	52	46	40	30

Find coefficient of correlation and PE.

31. Following typing errors per page were observed in book:

No. of errors	0	1	2	3	4
No. of pages	208	90	20	6	1

Fit a Poisson distribution.

(2 x 15 = 30 Marks)

****