C 2104   (Pages : 3)   Name...

                                                      Reg. No.....................................

FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
APRIL 2021

B.Com.

BCM 4C 04—QUANTITATIVE TECHNIQUES FOR BUSINESS

(2017 Admissions)

Time : Three Hours   Maximum : 80 Marks

Part A

Answer all questions.
Each question carries 1 mark.

Choose the correct answer :

1. Binomial distribution is developed by ———————.

    a) James Bournoully.   b) Jakob Bernoully.

    c) James Bernoully.   d) None of these.

2. Poisson distribution is applicable to ———————.

    a) Rare events.   b) Continuous distribution.

    c) Events having two outcomes.   d) Unexpected events.

3. Base theorem is based on ———————.

    a) Addition theory.   b) Multiplication theory.

    c) Inverse probability.   d) None of these.

4. The mean of Poisson distribution is ———————.

    a) P.   b) O.

    c) np.   d) Positive part.

5. Conditional probability is represented by ———————.

    a) A/B.   b) B/A.

    c) C/D.   d) All of these.

                                                      Turn over

Fill in the blanks :

6. When the amount of change in one variable leads to constant change in other variable, correlation is ——————————.

7. Regression analysis is one of the very scientific techniques for making ——————————.

8. A set events is said to be mutually exclusive if ——————————.

9. SD of binomial distribution ——————————.

10. Most discrete probability distributions tend to normal distribution as ——————————.

(10 × 1 = 10 marks)

Part B

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

11. What is meant by exhaustive events ? Give example.

12. Describe the term "correlation co-efficient".

13. State basic properties of normal distribution.

14. What is SE ?

15. Describe the 'law of statistical regularity'.

16. Explain briefly conditional probability.

17. What is meant by Central Limit theorem ?

18. What is critical region ?

19. Describe F test.

20. What is meant by 'ANOVA' ?

(8 × 2 = 16 marks)

Part C

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

21. Explain properties of binomial distribution.

22. Describe the concept 'hypothesis' and its types.

23. What is meant by tailed tests ? Describe in detail its types.

24. What are the uses of Chi-square test ?

25. Find the correlation co-efficient if $\sum xy = 203, \sum x^2 = 400, \sum y^2 = 190$.

26. Find b_{yx} if $2x + 4y - 5 = 0$ is equation of y on x.

27. What is the probability of selecting a boy from a class containing 4 boys and 3 girls.

28. The probability that a batsman scoring a century in a cricket matches is $\frac{1}{3}$. What is the probability that out of 5 matches, he may score century in : a) Exactly 2 matches ; b) no matches.

(6 × 4 = 24 marks)

Part D

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

29. In a town 10 accidents took place in a span of 50 days. Assuming that the number of accidents per day follows the Poisson distribution, find the probability that there will be three or more accidents in a day.

30. In a continuous random variate which is normal with mean 485 and standard deviation 33. Calculate the percentage of items between, a) 450 and 485 ; b) 450 and 500 ; c) less than 45 ; d) 500 and 531 ; and e) more than 531.

31. From the following data use Chi-square test and calculate whether innoculation is effective in preventing tuberculosis :

		Attacked	Not attacked
Inoculated	...	31	469
Non-inoculated	...	185	1315

(2 × 15 = 30 marks)