C 21202 (Pages : 4) Name...

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

FOURTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
APRIL 2022

B.Com.

BCM 4C 04—QUANTITATIVE TECHNIQUES FOR BUSINESS

(2017—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

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

I. Choose the Correct Answer :

1 The statistical technique of determining numerical values of the likely hood of the occurrence of events the :

(a) Interpolation. (b) Statistical quality control.

(c) Probability. (d) Hypothesis testing.

2. The numerical value to express the extent of relationship exists between two or more variables :

(a) Co-efficient of variance. (b) Regression co-efficient.

(c) Correlation Co-efficient. (d) Standard error.

3. Any possible outcome of a random experiment is called :

(a) An event. (b) Random Error.

(c) null set. (d) Mutually exclusive events.

4. Which is not the Property of Normal Distribution or Normal Curve ?

(a) Continuous distribution.

(b) Symmetrical about the mean.

(c) Variance = npq.

(d) Quantities are equi-distant from median.

Turn over

5. Type I Error is :

    (a) Rejecting a null hypothesis when it is false.

    (b) Accepting a null hypothesis when it is true.

    (c) Rejecting a null hypothesis when it is true.

    (d) Accepting a null hypothesis when it is false.

Fill in the Blanks :

6. ———————— measures asymmetry of a distribution.

7. ———————— is used to estimate the value of one variable for a given value of another.

8. Two events are said to be ———————— if the occurrence of one of them excludes the possibility of the occurrence of the other in a single observation.

9. The Variance of Poisson distribution is ————————.

10. The statistical tests based on the assumption that population or population parameter is normally distributed are called ————————.

(10 × 1 = 10 marks)

Part B

Answer any **eight** *questions from the following.*
Each question carries 2 *marks.*

11. What are the Limitations of Quantitative Techniques

12. What is correlation analysis ?

13. Which are the different Degrees of correlation ?

14. What are the regression lines ?

15. Distinguish between Simple and Compound Events.

16. What is Classical Approach to Probability ?

17. Which are the properties of binomial distribution ?

18. What is the range of Normal Curve ?

19. Which are the assumptions in t-test ?

20. What are the Assumptions of F-distribution ?

(8 × 2 = 16 marks)

Part C

Answer any **six** *questions from the following.*
Each question carries 4 *marks.*

21. Which are the popular mathematical quantitative techniques ?

22. Which are the graphic methods of measuring correlation ?

23. Calculate Karl Pearson's co-efficient of correlation from the following information and comment on the result : Standard deviation of X series 10, Standard deviation of Y series 12, Arithmetic mean of X series 25, Arithmetic mean of Y series 35, Summation of product of deviations from actual arithmetic means of two series 24, Number of observations

24. Tickets are numbered from 1 to 100. They are well shuffled and a ticket is drawn at random. what is the probability that the drawn ticket has : (a) an even number, (b) a number 5 or a multiple of 5, (c) a number which is greater than 75, (d) a number which is a square ?

25. A university has to select an examiner from a list of 50 persons, 20 of them women and 30 men, 10 of them knowing Hindi and 40 not. 15 of them being teachers and the remaining 35 not. What is the probability of the University selecting a Hindi-knowing women teacher ?.

26. Four coins are tossed simultaneously. What is the probability of getting (a) 2 heads and 2 tails (b) at least two heads (c) at least one head.

27. Which are the Practical situations where Poisson Distribution can be used ?

28. Explain the Uses of F-distribution.

$(6 \times 4 = 24 \text{ marks})$

Part D

Answer any **two** *questions from the following.*
Each question carries 15 *marks.*

29. Find correlation between marks obtained by 10 students in mathematics and statistics :

X	:	2	4	6	6	8	9	10	4	7	4
Y	:	12	12	16	15	18	19	19	14	15	10

30. Fit a normal distribution of the following data :

Marks	:	10–20	20–30	30–40	40–50	50–60	60–70	70–80
No. of students	:	4	22	48	66	40	16	4

Turn over

31. The following table gives data regarding election to an office :

Economic Status

Attitude towards election

	Rich	Poor	Total
Favourable	50	155	205
Non-favourable	90	110	200
Total	140	265	405

Is attitude towards election influenced by economic status of workers.

(2 × 15 = 30 marks)

C 21202-A   (Pages : 4)   Name...

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BCM 4C 04—QUANTITATIVE TECHNIQUES FOR BUSINESS

(2017—2018 Admissions)

(Multiple Choice Questions for SDE Candidates)

Time : 15 Minutes	Total No. of Questions : 20	Maximum : 20 Marks

INSTRUCTIONS TO THE CANDIDATE

1. This Question Paper carries Multiple Choice Questions from 1 to 20.

2. The candidate should check that the question paper supplied to him/her contains all the 20 questions in serial order.

3. Each question is provided with choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and enter it in the main answer-book.

4. The MCQ question paper will be supplied after the completion of the descriptive examination.

BCM 4C 04—QUANTITATIVE TECHNIQUES FOR BUSINESS

(Multiple Choice Questions for SDE Candidates)

1. ———————————— is a powerful device developed over the matrix algebra.

   (A) Integration.

   (B) Differentiation.

   (C) Determinants.

   (D) None of these.

2. The quantitative measure of correlation between two variables is known as ————————.

   (A) Co-efficient of correlation.

   (B) Co-efficient of regression.

   (C) Co-efficient of determination.

   (D) None of the above.

3. Co-efficient of correlation explains ———————— of the relationship between two variables.

   (A) Direction.

   (B) Degree.

   (C) Direction and degree.

   (D) None of the above.

4. Regression co-efficient is independent of ————————.

   (A) Scale.

   (B) Origin.

   (C) Both.

   (D) None.

5. The term regression was used firstly by ————————.

   (A) Prof. Karl Pearson.

   (B) Edward Spearman.

   (C) Francis Galton.

   (D) None of these.

6. The numerical value given to the likelyhood of the occurrence of an event is called ————————.

   (A) Correlation.

   (B) Regression.

   (C) Probability.

   (D) None of these.

7. An event whose occurrence is impossible, is called ————————.

   (A) Sure event.

   (B) Impossible event.

   (C) Uncertain event.

   (D) None of these.

8. Selection of objects without considering their order is called ———————.

    (A) Combination.

    (B) Permutation.

    (C) Independent.

    (D) None of them.

9. An event consisting of those elements which are not in the given event is called ———————.

    (A) Simple event.

    (B) Derived event.

    (C) Complementary event.

    (D) None of these.

10. The probability of the intersection of two mutually exclusive events is always ———————.

    (A) 0.

    (B) 1.

    (C) Infinity.

    (D) None of these.

11. The mean of a binomial distribution is ———————.

    (A) np.

    (B) npq.

    (C) Square root of npq.

    (D) None of these.

12. In a ——————— distribution, mean is equal to variance.

    (A) Binomial.

    (B) Poisson.

    (C) Normal.

    (D) Gamma.

13. In Poisson distribution, mean is denoted by :

    (A) npq.

    (B) np.

    (C) m.

    (D) e.

14. Normal distribution was first discovered by ——————— in 1733 as limiting form of binomial distribution.

    (A) Karl Pearson.

    (B) James Bernoulli.

    (C) De-Moivre.

    (D) Simeon Denis Poisson.

15. Standard deviation of the sampling distribution is called ———————.

    (A) Probable error.

    (B) Standard error.

    (C) Mean deviation.

    (D) Co-efficient of variation.

Turn over

16. Power of a test is related to ————————.

    (A) Type I error.   (B) Type II error.

    (C) Both.   (D) None of the above.

17. Accepting a null hypothesis when it is true is a :

    (A) Type I error.   (B) Type II error.

    (C) Not an error.   (D) None of these.

18. Z-test was developed by ————————.

    (A) R.A. Fischer.   (B) Karl Pearson.

    (C) William Gosset.   (D) James Bernoulli.

19. In a normal curve, the significance level is usually termed as ———————— region.

    (A) Critical region.   (B) Acceptance region.

    (C) Level of acceptance.   (D) None of these.

20. ———————— are distribution free tests.

    (A) Parametric tests.   (B) Non-parametric tests.

    (C) Level of acceptance.   (D) None of these.