D 102985 **(Pages : 3)** **Name.....**

Reg. No.....

FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION
APRIL 2024

B.Com./B.B.A./B.H.A./B.T.H.M.

BCM 4C 04—QUANTITATIVE TECHNIQUES FOR BUSINESS

(2019 Admission onwards)

Time : Two Hours and a Half Maximum : 80 Marks

Answers should be written in English only.

Part A

Answer **all** *questions.*

1. Define Quantitative Techniques.
2. What is linear and non-linear regression ?
3. What is Co-efficient of Determination ?
4. Define a SET.
5. What is the probability that a card drawn from a pack of 52 cards is a card of King ?
6. What is a mutually exclusive event ?
7. What is conditional probability ?
8. What is a line of best fit ?
9. A class consists of 4 girls and 3 boys is to be arranged for a photograph in a single row. In how many ways can they be seated if all the girls sit together ?
10. Write down any *three* merits and demerits of Spearman's rank correlation co-efficient.
11. What is linear programming ?
12. What are the characteristics of a Poisson Distribution ?
13. Write down any *two* properties of Binomial Distribution.
14. What do you mean by perfect correlation ?
15. What is decision-making ?

(15 × 2 = 30, maximum ceiling 25 marks)

Turn over

Part B

Answer **all** *questions.*

16. Explain the underlying assumptions of Karl Pearson's Co-efficient of Correlation.

17. Discuss the applications of Quantitative Techniques.

18. Represent the followings by means of a Ven Diagram : $A \cup B$, $A \cap B$ and A^C.

19. Differentiate Correlation and Regression.

20. A candidate is selected for interview for three posts. For the first post there are three candidates, for the second there are four and for the third there are two. What are chances of his getting at least one post.

21. Explain the conditions under which binomial distribution is used.

22. What are the different types of decisions ?

23. Calculate Karl Pearson's correlation coefficient between X and Y from the following data :

$N = 11, \sum X = 117, \sum X^2 = 1313, \sum Y = 260, \sum Y^2 = 6580, \sum XY = 2827.$

(8 × 5 = 40, Maximum ceiling 35 marks)

Part C

Answer any **two** *questions.*

24. The following mistakes per page were noted in a book.

No. of mistakes per page	:	0	1	2	3	4	Total
No. of times the mistake occurred	:	211	90	19	5	0	325

Fit a Poisson Distribution.

25. Solve graphically the following linear programming problem :

Minimize $Z = 3X_1 + 5X_2$

subject to $-3X_1 + 4X_2 \geq 12$

$2X_1 - X_2 \geq -2$

$2X_1 + 3X_2 \geq 12$

$X_1 \leq 4, X_2 \geq 2$

$X_1, X_2 \geq 0.$

26. Calculate Karl Pearson's Correlation Co-efficient between marks in Accountancy and Statistics :

Marks in Accountancy	:	48	35	17	23	47
Marks in Statistics	:	45	20	40	25	45

27. Explain the application of Quantitative Technics in Business and Industries.

(2 × 10 = 20 marks)