

D 11773

(Pages : 4)

Name.....

Reg. No.....

**THIRD SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2021**

B.B.A.

BBA IIIC 03—QUANTITATIVE TECHNIQUES FOR BUSINESS

(2014—2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part I

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

Choose the correct answer from the choices given :

1. Standard Error arises due to use of :
 - (a) Complete Enumeration of Survey.
 - (b) Use of Sampling.
 - (c) Both (A) and (B).
 - (d) Neither (A) nor (B).
2. If A and B are two events such that $P(A) \neq 0$ and $P(B/A) = 1$ then :
 - (a) $A \subset B$.
 - (b) $B \subset A$.
 - (c) $B = \phi$.
 - (d) $A = \phi$.
3. In a single throw of a die, the probability of getting a multiple of 3 is :
 - (a) $1/2$.
 - (b) $1/3$.
 - (c) $1/6$.
 - (d) $2/3$.
4. The co-efficient of correlation is not dependent on :
 - (a) Change of Scale.
 - (b) Change of Origin.
 - (c) Both (A) and (B).
 - (d) None of the above.
5. The Original Hypothesis is known as :
 - (a) Alternate Hypothesis.
 - (b) Null Hypothesis.
 - (c) Simple Hypothesis.
 - (d) Casual Hypothesis.

Turn over

Fill in the blanks :

6. When the expected frequencies and observed frequencies completely coincide, the Chi-square value will be _____.
7. If one regression coefficient is negative, the other is _____.
8. Correlation is a _____ measure showing association of variables.
9. _____ is the Hypothesis whose validity is not tested.
10. _____ is a Probability Distribution where mean equal to variance.

(10 × 1 = 10 marks)

Part II

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

11. State the basic assumptions made for Analysis of Variance.
12. Give two uses of Correlation.
13. Classical Probability is often called a priori probability. Why ?
14. State Bayes' Theorem.
15. 4 dice are thrown 162 times. The occurrence of 2 and 3 is consider a success. In how many throws do you expect : (a) Exactly 2 success ; and (b) At least one success.
16. Distinguish between Mutually Exclusive and Not Mutually Exclusive Events.
17. What is Level of Significance ?
18. Define Null Hypothesis.
19. What is a Non-Parametric Test ?
20. Give any *two* significances of Quantitative Techniques in Business.

(8 × 2 = 16 marks)

Part III

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

21. Explain the procedure for Hypothesis Testing.
22. In a partially destroyed record of an analysis of correlation data the following results only are legible. Variance of $x = 9$. Regression equations : $8x - 10y + 66 = 0$, $40x - 18y = 214$. Find (a) The mean value of X and Y ; (b) The co-efficient of Correlation ; (c) The standard deviation of Y.

23. A fertilizer mixing machine is set to give 4 kg. of Nitrate for every quintal bag of fertilizers. Five 100 kg. bags are examined. The percentage of nitrate are 2, 6, 4, 3,1. Is there reasons to believe that the machine is defective ?
24. Define Chi-square Distribution. Give the properties of Chi-square distribution.
25. A puzzle is given to 2 students A and B. The odds against student A in solving it is 10 to 6. Odds is favour of B solving the puzzle is 10 to 12.
- What is the probability of solving the puzzle if both A and B try ?
 - If both try independently what is the probability of solving the puzzle.
 - What is the probability that neither solve the puzzle ?
26. The variable X follows a Normal Distribution with mean 45 and SD 10. Find the probability that : (a) $x \geq 60$; and (b) $40 \leq x \leq 56$.
27. Find the co-efficient of correlation between X and Y and Interpret the result :
- | | | | | | | | |
|---|---|-----|-----|-----|-----|-----|-----|
| X | : | 1.2 | 1.1 | 1.9 | 1.8 | 1.0 | 0.9 |
| Y | : | 15 | 10 | 20 | 10 | 10 | 5 |
28. What are Quantitative Techniques ? Bring out the scope of Quantitative Techniques

(6 × 4 = 24 marks)

Part IV

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

29. In a survey of 2000 students of which 55 % were undergraduates, 20 % favored the autonomous colleges, while 40 % of the post graduates opposed. Test at 5 % level of significance that opinions of undergraduates and post graduate students on autonomous status of colleges are independent.
30. The following table gives the yields of 15 sample fields under three varieties of seeds A, B and C.

<i>Yields</i>		
A	B	C
5	3	10
6	5	13
8	2	7
1	10	13
5	0	17

Test at 5 % level of significance.

Turn over

31. A systematic sample of 100 pages was taken from the Concise Exphoria Dictionary and the observed frequency distribution of foreign words per page was found to be as follows. Calculate the expected frequencies using Poisson Distribution. Also compute variance of fitted distribution.

No. of foreign words per page (x)	:	0	1	2	3	4	5	6
Frequency (f)	:	48	27	12	7	4	1	1

(2 × 15 = 30 marks)