

FOURTH SEMESTER B.Com./B.B.A. DEGREE EXAMINATION, APRIL 2019

(CUCBCSS—UG)

B.Com.

BCM 4C 04—QUANTITATIVE TECHNIQUES FOR BUSINESS

(2014 Admissions)

Time : Three Hours

Maximum : 80 Marks

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

1. Estimation of the unknown value of one variable from the known value of other variable is known as _____.
 - (a) Correlation.
 - (b) Regression.
 - (c) Probability.
 - (d) Bayes Theorem.
2. If the happening of one event affects the happening of the other, the events are said to be _____.
 - (a) Dependent.
 - (b) Independent.
 - (c) Mutually Exclusive.
 - (d) Equally likely events.
3. Parameter of Poisson distribution is _____.
 - (a) m .
 - (b) n, p .
 - (c) σ .
 - (d) n, p, q .
4. Type 1 error means :
 - (a) Accepting null hypothesis when it is true.
 - (b) Accepting null hypothesis when it is false.
 - (c) Rejecting null hypothesis when it is false.
 - (d) Rejecting null hypothesis when it is true.
5. The probability of getting a king card from a pack of playing cards is _____.
 - (a) $1/52$.
 - (b) $4/52$.
 - (c) $13/52$.
 - (d) $8/52$.

Turn over

Fill in the blanks :

6. If A and B are two mutually exclusive events, then $P(A \cup B) = \underline{\hspace{2cm}}$.
7. When the correlation co-efficient is 1, there is $\underline{\hspace{2cm}}$ correlation.
8. The height of the normal curve is maximum at $\underline{\hspace{2cm}}$.
9. Statistical test applied in Analysis of variance is $\underline{\hspace{2cm}}$.
10. Poisson distribution was developed by $\underline{\hspace{2cm}}$.

(10 × 1 = 10 marks)

Part B

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

11. What do you mean by Quantitative Techniques ?
12. Point out the methods for studying correlation.
13. Define Probability.
14. Write down the Classical definition of Probability.
15. What is Standard Normal Curve ?
16. What is Statistical Inference ?
17. What is Standard Error ?
18. Define χ^2 .
19. What are the different types of variances in the two-way classification of data ?
20. What is Permutation ?

(8 × 2 = 16 marks)

Part C

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

21. Explain the application of Quantitative Techniques in Business and Industry.
22. Explain the properties of Normal curve.
23. Describe the importance of Poisson Distribution.
24. Explain Baye's theorem with example.
25. Find Karl Pearson's co-efficient of correlation and Probable error :

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

26. Forty lottery tickets numbered 1, 2, 3..... are put in a bag. Two Draws of 1 ticket each are made. The ticket after the first draw is replaced. What is the probability that in the first draw it is a multiple of 4 or 5 and in the second it is a multiple of 5 or 7 ?
27. From the production process which turns 5% defective on an average, a sample of size 10 is drawn. Find the probability that the sample contains i) no defective ; ii) at most one defective ; iii) atleast one defective.
28. A fertilizer mixing machine is set to give 12 kg of nitrate for every quintal bag of fertilizer. Ten 100 kg bags are examined. The percentage of nitrates is as follows. 11, 14, 13, 12, 13, 12, 13, 14, 11, 12. Is there reason to believe that the machine is defective ?

(6 × 4 = 24 marks)

Part D

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

29. 1000 students are randomly selected from 10000 students enrolled in a PG programme were classified by age and grade point :

Grade point	Age in years			
	21 and under	22-24	25-27	Over 27
Up to 3.0	320	80	10	200
3.1-3.5	50	15	70	60
3.6-4.0	30	5	20	40

At 5% level of significance test the hypothesis that age and grade points are independent.

30. From the data given below find :
- Two regression equations.
 - Co-efficient of correlation between the marks in Economics and Statistics.
 - The most likely marks in Statistics when mark in Economics is 30.

Marks in Economics	:	25	28	35	32	31	36	29	38	38	32
Marks in Statistics	:	43	46	49	41	36	32	31	30	33	39

31. What is Statistical Tests ? Explain the procedure for testing of Hypothesis.

(2 × 15 = 30 marks)