

D 52758

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Name.....

Reg. No.....

**FIRST SEMESTER M.Com. (CBCSS) [REGULAR/SUPPLEMENTARY] DEGREE  
EXAMINATION, NOVEMBER 2023**

Master of Commerce

MCM 1C 03—QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

(2019 Admisson onwards)

Time : Three Hours

Maximum Weightage : 30

**Section A**

*Answer any **four** questions.*

*Each question carries 2 weightage.*

1. Explain the role of quantitative techniques in decision making.
2. State the concept of (a) Pont estimation (b) Interval estimation.
3. What is F Test ? List out some of its applications.
4. Distinguish between Regression and Correlation.
5. Bring out the important properties of Poisson distribution.
6. Define hypothesis. Briefly explan different types of hypotheses.
7. Discuss the use of Excel in data analysis.

(4 × 2 = 8 weightage)

**Section B**

*Answer any **four** questions.*

*Each question carries 3 weightage.*

8. Briefly explain the limitatons of quantitative techniques.
9. Write note on (a) One sample test and (b) Two sample tests.
10. The weekly wages of 1000 workmen are normally distributed around a mean of Rs. 70 and Standard deviation of Rs. 5. Estimate the number of workers whose weekly wages will be (a) between Rs. 69 and Rs. 72 ; (b) More than Rs. 75 ; (c) Less than Rs. 63.
11. A survey was conducted to study the relationship between expenditure on accommodation (x) and expenditure on food (y) and the following results were obtained :

	<i>Mean</i>	<i>Standard Deviation</i>
Expenditure on Accommodation (Rs.) ...	173	63.15
Expenditure on Food (Rs.) ...	47.86	22.98

Co-efficient of correlation = + 0.57

Write down the regression equation and estimate the expenditure on food when the expenditure on accomodation is Rs. 200.

**Turn over**

12. Following table use the yield of 15 sample plots and 3 varieties of seeds :

	A	B	C
	20	18	25
	21	20	28
	23	17	22
	16	15	28
	20	25	32

Test whether the average yield of land and the varieties of seeds differ significantly.

13. In a referendum submitted to the 'student body' at a university, 850 men and 550 women voted. 530 of the men and 310 of the women voted 'yes'. Does this indicate a significant difference of the opinion on the matter between men and women students ?
14. A factory is producing 50000 pairs of shoes daily. From a sample of 500 pairs, 2 % are found to be of substandard quality. Estimate the number of pairs that can be reasonably expected to be spoiled in the daily production and assign limits at 95 % level of confidence.

(4 × 3 = 12 weightage)

### Section C

Answer any **two** questions.

Each question carries 5 weightage.

15. The recruits were subjected to selection test to ascertain their suitability for a certain course of training. At the end of the training, they were given proficiency test. The marks secured by the recruits are recorded below :

Selection Test Score (X)	:	65	66	67	68	69	70	71	67
Proficiency Test Score (Y)	:	67	68	64	72	70	67	70	68

Calculate co-efficient of correlation and comment on the result.

16. Based on informatoin on 1000 randomly selected fields, about the tendency status of the cultivation of these field and use of fertilizers, collected in Agro economic survey, the following classification was noted :

		Owned	Rented	Total
Using fertilizers	...	416	184	600
Not using fertilizers	...	64	336	400
Total	...	480	520	1000

Would you conclude that owner cultivators are more inclined towards the use of fertilizers at 5 % level. Use Chi square.

17. Two samples are drawn from two normal population. From the following data test whether two samples have the same variance at 5 % level :

Sample 1 :	60	65	71	74	76	82	85	87		
Sample 2 :	61	66	67	85	78	63	85	86	88	91

18. Explain the different tools for analysis, available in SPSS.

(2 × 5 = 10 weightage)

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MCM 1C 03—QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

(2019 Admission onwards)

[Improvement Candidates need not appear for MCQ Part]

(Multiple Choice Questions for SDE Candidates)

**Time : 20 Minutes****Total No. of Questions : 20****Maximum : 5 Weightage****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.

## MCM 1C 03—QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS

(Multiple Choice Questions for SDE Candidates)

1. Correlation analysis is a \_\_\_\_\_.  
(A) Univariate analysis. (B) Bivariate analysis.  
(C) Multivariate analysis.. (D) Both B and C.
2. If change in one variable results a corresponding change in the other variable, then the variables are \_\_\_\_\_.  
(A) Correlated. (B) Not correlated.  
(C) Any of the above. (D) None of the above.
3. When the values of two variables move in the same direction, correlation is said to be \_\_\_\_\_.  
(A) Linear. (B) Non-linear.  
(C) Positive. (D) Negative.
4. If dots are lying on a scatter diagram in a haphazard manner, then  $r =$  \_\_\_\_\_.  
(A) 0. (B) +1.  
(C) -1. (D) None of these.
5. Product moment correlation method is also called \_\_\_\_\_.  
(A) Rank correlation. (B) Pearsonian correlation.  
(C) Concurrent deviation. (D) None of these.
6. The -ve sign of correlation coefficient between X and Y indicates \_\_\_\_\_.  
(A) X decreasing. (B) Y increasing.  
(C) X increasing. (D) Y decreasing.
7. If there are two variables, there can be at most \_\_\_\_\_ number of regression lines.  
(A) One. (B) Two.  
(C) Three. (D) Infinite.

8. If the regression line is Y on X, then the variable X is known as
- (A) Independent variable, (B) Explanatory variable.  
(C) Regressor. (D) All the above,
9. Regression line is also called \_\_\_\_\_.
- (A) Estimating equation. (B) Prediction equation.  
(C) Line of average relationship. (D) All the above.
10. Arithmetic mean of the two regression coefficients is :
- (A) Equal to correlation coefficient.  
(B) Greater than correlation coefficient.  
(C) Less than correlation coefficient.  
(D) Equal to or greater than correlation coefficient
11. In \_\_\_\_\_ regression analysis, only one independent variable is used to explain the dependent variable.
- (A) Multiple. (B) Non-linear.  
(C) Linear. (D) None of these.
12. The regression coefficient and correlation coefficient of the two variables will be the same if their \_\_\_\_\_ are same.
- (A) Arithmetic mean. (B) Standard deviation.  
(C) Geometric mean. (D) Mean deviation.
13. The probability of rejecting a true null hypothesis is called \_\_\_\_\_.
- (A) Degree of freedom. (B) Level of significance.  
(C) Level of confidence. (D) None of these.
14.  $1 - \text{Level of confidence} =$  \_\_\_\_\_.
- (A) Level of significance. (B) Degree of freedom.  
(C) Either a or b. (D) . None of these.

Turn over

15. While testing a hypothesis, if level of significance is not mentioned, we take \_\_\_\_\_ level of significance.
- (A) 1 %.
- (B) 2 %.
- (C) 5 %.
- (D) 10 %.
16. Chi-square test was first used by :
- (A) R A Fisher.
- (B) William Gosset.
- (C) James Bernoulli.
- (D) Karl Pearson.
17. Degrees of freedom for Chi-square test in case of contingency table of order  $(4 \times 3)$  is :
- (A) 4.
- (B) 3.
- (C) 6.
- (D) 7.
18. Degrees of freedom for Chi-square test in case of contingency table of order  $(5 \times 5)$  is :
- (A) 25.
- (B) 16.
- (C) 10.
- (D) Infinity.
19. The control charts used to monitor variable is \_\_\_\_\_.
- (A) Range chart.
- (B) P-chart.
- (C) C-chart.
- (D) All of the above.
20. The control charts used for the number of defects per unit is :
- (A) Range chart.
- (B) P-chart.
- (C) C-chart.
- (D) Mean Chart.