

D 53836

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Name.....

Reg. No.....

**FIRST SEMESTER M.B.A. DEGREE EXAMINATION, JANUARY 2024**

(CUCSS)

M.B.A.

BUS 1C 07—QUANTITATIVE TECHNIQUES

(2016 Scheme)

Time : Three Hours

Maximum : 36 Weightage

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

1. What is multiplication theorem ?
2. Explain Poisson distribution.
3. What is the purpose of regression analysis ?
4. Explain standard error.
5. What are the steps for doing correlation test in SPSS ?
6. What is a parametric test ?

(6 × 1 = 6 weightage)

**Part B***Answer any **four** questions.**Each question carries 3 weightage.*

7. Past history shows that 60 % of college students are smokers . A sample of 5 students is selected. What is the probability that :
  - (i) Exactly two students are smokers ?
  - (ii) At most students are smokers ?
  - (iii) What is the variance of smokers ?
8. What are non-probability sampling techniques ?

**Turn over**

9. Calculate the two regression equations of X on Y and Y on X from the data given below, taking deviations from a actual means of X and Y.

Price	:	10	12	13	12	16	15
Amount demanded	:	40	38	43	45	37	43

Estimate the likely demand when the price is Rs. 20.

10. Explain different theorems of probability.
11. Find the *t*-test value for the following two sets of values : 7, 2, 9, 8 and 1, 2, 3, 4 ?
12. Explain different types of nonparametric tests.

(4 × 3 = 12 weightage)

### Part C

Answer any **three** questions.

Each question carries 4 weightage.

13. In order to determine the possible effect of a chemical treatment on the rate of germination of cotton seeds a pot culture experiment was conducted. The results are given below

#### *Chemical treatment and germination of cotton seeds*

		<i>Germinated</i>	<i>Not germinated</i>	<i>Total</i>
Chemically treated	...	118	22	140
Untreated	...	120	40	160
Total	...	238	62	300

Does the chemical treatment improve the germination rate of cotton seeds at 1 % level ?

14. Find the value of the correlation co-efficient from the data given in the following table :

<i>Subject</i>		<i>Age (x)</i>	<i>Glucose level (y)</i>
1	...	43	99
2	...	21	65
3	...	25	79
4	...	42	75
5	...	57	87
6	...	59	81

15. There are 3 multiple choice questions in a MCQ test. Each MCQ consists of four possible choices and only one of them is correct. If an examinee answers those MCQ randomly (without knowing the correct answers)
- What is the probability that exactly any *two* of the answers will be correct ?
  - What is the probability that at least two of the answers will be correct ?
  - What is the probability that at most two of the answers will be correct ?
  - What will be the average or expected number of correct answers ?
  - Also, find the standard deviation of number of correct answers.
16. Define sampling. Explain different types of samples.
17. Explain in detail the scope of SPSS software.

(3 × 4 = 12 weightage)

### Part D

**Compulsory.** *Question carries 6 weightage.*

18. The following data show the number of worms quarantined from the GI areas of four groups of muskrats in a carbon tetrachloride anthelmintic study. Conduct a two-way ANOVA test.

I	II	III	IV
338	412	124	389
324	387	353	432
268	400	469	255
147	233	222	133
309	212	111	265

(1 × 6 = 6 weightage)