D 53836 **(Pages : 3)** **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

	Germinated	*Not germinated*	*Total*
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 :

Subject		*Age* (*x*)	*Glucose level* (*y*)
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)

    (a) What is the probability that exactly any *two* of the answers will be correct ?

    (b) What is the probability that at least two of the answers will be correct ?

    (c) What is the probability that at most two of the answers will be correct ?

    (d) What will be the average or expected number of correct answers ?

    (e) 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)