

B. COM DEGREE END SEMESTER EXAMINATION - JULY 2021**SEMESTER 2 :COMMERCE****COURSE : 19U2RCOM05 : QUANTITATIVE TECHNIQUES FOR BUSINESS RESEARCH**

(For Regular - 2020 Admission and Supplementary - 2019 Admission)

Time : Three Hours

Max. Marks: 75

PART A**Answer any 10 (2 marks each)**

1. What do you mean by literature survey?
2. Define Primary Data.
3. Distinguish between structured and unstructured observations.
4. A class consist of 80 students, 25 students are girls and the rest are boys. 10 of them are rich and remaining are poor. 20 of them are fair complexioned. What is the probability of selecting a fair complexioned rich girl?
5. A pack contains 4 blue, 2 red and 3 black pens. If 2 pens are drawn at random from the pack, not replaced and then another pen is drawn. What is the probability of drawing 2 blue pens and 1 black pen?
6. What do you understand by the level of significance and rejection region in the context of testing of hypothesis?
7. State the uses of Chi-Square distribution.
8. What is meant by lead and lag correlation?
9. State the properties of regression lines.
10. What are the components of preliminary section in a report?
11. What is meant by bibliography?
12. What do you understand by analytical report?

(2 x 10 = 20)**PART B****Answer any 5 (5 marks each)**

13. Explain the criteria for the selection of a sampling procedure.
14. A man can hit the target 3 times in 5 shots. B- two times in 5 shots and C- 3 times in 4 shots. They fire a volley. What is the probability that a) exactly two shots hit. b) Only one hits. c) All shots hit. d) None hits.
15. Out of 120 persons in a village, 76 persons are administered a new drug for preventing influenza and out of them, 24 persons were attacked by influenza. Out of those who were not administered the new drug, 12 persons were affected by influenza. Assuming the person is selected at random, find the probability that the selected person is
 - a) a new drug administered
 - b) attacked by influenza
 - c) not attacked given that he is not administered by new drug
 - d) attacked given he is not administered by new drug
 - e) Not attacked and is new drug administered.
16. In a laboratory experiment, two random samples gave the following results:

Sample	Size	Sample Mean	Sum of squares of deviations from mean
1	10	15	90
2	12	14	108

Test the equality of sample variance at 5% level of significance.

17. Two batches of same product are tested for their mean life. Assuming that lives of the product follow a normal distribution with an unknown variance test the mean life is same for both the batches given the following information.

Batch	Sample Size	Mean Life in Hrs.	S.D
I	10	750	12
II	8	820	14

18. The coefficient of correlation between x and y is 0.48. their covariation is 36. the variance of x=16. find the standard deviation of y series.
19. Calculate rank Co-efficient of correlation for 10 students in two different subjects.

Student No.	1	2	3	4	5	6	7	8	9	10
Student I	37	52	75	11	69	78	90	40	32	50
Student II	69	48	80	15	49	70	95	16	21	25

20. Explain the need of a research report.

(5 x 5 = 25)

PART C

Answer any 3 (10 marks each)

21. Explain in detail the various sampling and non-sampling errors.
22. How many different words containing all letters of the word TRIANGLE can be formed? how many of them a) begins with T b) begins with E c) begins with T and ends with E. d) Have Tand E at the end place. e) two consonants are never together f) when no two vowels are together g) when consonants and vowels are both together h) vowels occupy odd places i) if the relative position of vowels and consonants remain unaltered.
23. Four identical coins are tossed 160 times and the number of heads appearing each time is recorded as follows. Test whether the coins are unbiased.

No. of heads	0	1	2	3	4
Frequency	14	30	70	35	11

24. A special fertilizer was experimented on four fields A, B, C and D .in each field 4 beds were prepared and fertilizer was used. The yields of the beds of A, B, C and D fields are given below. Find out whether the difference between the means of the yield in field is significant or not?(the table value of F at 5% level of significance for $V_2 = 3$ and $V_1 = 12$ is 8.74)

A	B	C	D
8	9	3	3
12	4	8	7
1	7	2	8
3	1	5	2

25. The test score and sales done by 10 selected salesmen of a company shows the following.

Test Score	55	65	75	60	74	85	70	73	80	65
Sales (Rs. In 000')	74	82	94	78	85	96	84	89	90	75

Fit regression equation of test score on sales; and regression equation of sales on test score. Also estimate sales for the test score of 50.

(10 x 3 = 30)