Reg. No ....   Name ....

B. COM DEGREE END SEMESTER EXAMINATION - MARCH 2020
SEMESTER 2 : BCOM
COURSE : **19U2CRCOM05 : QUANTITATIVE TECHNIQUES FOR BUSINESS RESEARCH**
(For Regular - 2019 Admission)

Time : Three Hours   Max. Marks: 75

Section A
Answer any 10 (2 marks each)

1. Explain multi-stage sampling.
2. State the assumptions in sampling.
3. What do you understand by deliberate sampling?
4. What do you mean by a) complement of an event b) union of two events?
5. What is the probability of selecting two M from the letters of the word MANAGEMENT?
6. What do you mean by a) power of test b) critical region
7. State the characteristics of Chi-Square test.
8. Why is the study of correlation important?
9. How do you interpret coefficient of correlation on the basis of probable error?
10. What is the purpose of a report?
11. What is meant by appendix?
12. What do you understand by glossary?

(2 x 10 = 20)

Section B
Answer any 5 (5 marks each)

13. Distinguish between (a) Population and Sample (b) cluster sampling and Stratified Sampling (c) systematic sampling and sequential sampling.
14. (a) How many different words can be formed with the letters of the word SUNDAY? How many of the words begin with N? How many begin with N and end in Y?
    (b) How many numbers between 1000 and 10,000 can be formed with the digits 1, 2, 3, 4, 5, 6, 7, 8, 9? How many of them are odd?
15. It is not known whether a coin is fair or unfair. If the coin is fair the probability of tail is 0.5, but if the coin is unfair the probability of tail is 0.1. A prior probability given of a fair coin is 0.80 and of unfair coin is 0.20. the coin is tossed and the result is a tail. What is the probability that 1) the coin is fair 2) the coin is unfair?
16. Out of 8000 graduates in a town 800 are female out of 1800 graduate employees 120 are females. Use Chi-Square to determine if any distinction is made in the appointment on the basis of gender?
17. Six guinea pigs injected with 0.5 mg of a medication took on the average 15.4 seconds to fall asleep with an unbiased standard deviation of 2.2 seconds while six other guinea pigs injected with 1.5 mg of the medication took on the average 11.2 seconds to fall asleep with an unbiased standard deviation of 2.6 seconds. Use 5% level of significance to test the null hypothesis that the difference in dosage has no effect.

18. Calculate rank Co-efficient of correlation for 12 students in two different subjects.

Student No.	1	2	3	4	5	6	7	8	9	10	11	12
Student I	8	7	10	1	4	5	3	6	9	11	12	2
Student II	2	4	9	3	12	11	8	1	7	6	5	2

19. The two regression equations are 10x-5y+36=0 and 16x-6y-85=0. Find the which line is x on y. also find the correlation coefficient between x and y.

20. What are the preliminaries of report writing?

$$(5 \times 5 = 25)$$

Section C
Answer any 3 (10 marks each)

21. Explain different methods of data collection. Illustrate your answer with imaginary examples.

22. Two cards are drawn one by one without replacement. Find the probability that

    a. The first card is an ace
    b. The first card is a club-ace or a queen
    c. At least one is a number card
    d. At least one is a face card
    e. Both are face cards
    f. Not more than one card is a number card
    g. Second card is not a diamond
    h. Cards are of different symbols.
    i. The cards are jack or heart or both.

23.

Below are given gain in weight (lbs) of cows fed on 2 diets X and Y .

Diet X :	25	32	30	32	24	14	32			
Diet Y :	24	34	22	30	42	31	40	30	32	35

Test at 5% level whether the diets differ as regards their effect on mean increase in weight. [Table value of t for 15 d. o. f at 5% = 1.753]

24. Two sets of ten students selected at random from a collage were taken, one was given memory test as they were and the other set was given a memory test after two week's training and the scores were given below.

Set A:	10	8	7	9	8	10	9	6	7	8
Set B:	12	8	8	10	8	11	9	8	9	9

Test whether there is a significant difference in mean scores. [Table value of t for 18 d. f = 2.101]

25. From the following data obtain two regression equations

X	6	9	12	5	8	14
Y	5	20	15	12	9	11

$$(10 \times 3 = 30)$$