

B. COM. DEGREE END SEMESTER EXAMINATION - MARCH 2020**SEMESTER –2: COMMERCE (CORE COURSE)****COURSE: 15U2CRCOM4: QUANTITATIVE TECHNIQUES FOR BUSINESS RESEARCH***(Common for Improvement 2018/Supplementary 2018/2017/2016 /2015 Admissions)*

Time: Three Hours

Max Marks: 75

SECTION A***Answer all the Questions. Each Questions carries 2 marks***

1. Define Research.
2. What is cumulative frequency curve?
3. What is Cluster Sampling?
4. What is Bibliography?
5. What do you mean by Literature Survey?
6. What is scatter diagram?
7. What are independent and dependent variables.
8. Differentiate between Schedule and questionnaire.
9. What is Linear and Non-linear Correlation?
10. Differentiate between Sample space and event (2 x 10 = 20)

SECTION B***Answer any five questions. Each Questions carries 5 marks***

11. A bag contains 7 white and 9 black balls. 3 balls are drawn together. What is the probability that
 - (i) All are black
 - (ii) All are white
 - (iii) 1white and 2 black
 - (iv) 2 white and 1 black
12. The coefficient of rank correlation of the marks obtained by 10 students in mathematics and statistics was found to be 0.5. It was then detected that the difference in ranks in the two subjects for one particular student was wrongly taken to be 3 in place of 7. What should be the correct rank correlation coefficient?
13. What are the different types of Diagrams?
14. The following table shows the area in millions of sq. km of oceans of the world :

Ocean	Area (millions sq. km.)
Pacific	70.8
Atlantic	41.2
Indian	28.5
Antarctic	7.6
rctic	4.8

Draw a pie diagram to represent the data.
15. Difference between primary and secondary data.

16. The probability that a contractor will get a plumbing contract is $\frac{2}{3}$ and the probability that he will not get an electric contract is $\frac{5}{9}$. If the probability of getting at least one contract is $\frac{4}{5}$ what is the probability that he will get both the contracts?
17. Two ladies were asked to rank 10 different types of lipsticks. The ranks given by them are as follows:
- | Lipsticks: | A | B | C | D | E | F | G | H | I | J |
|------------|---|---|---|---|----|---|---|---|---|----|
| Pooja : | 1 | 2 | 4 | 3 | 10 | 5 | 6 | 7 | 8 | 9 |
| Megha : | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
- Compute Spearman's Rank correlation coefficient.

(5 x 5 = 25)

SECTION C**Answer any three from the following. Each questions carries 10 marks.**

18. Data relating to age of the students and their games is given below. Calculate correlation between the age of the students and their playing habits.

Age	15	16	17	18	19	20
No. of Students	250	200	150	120	100	80
Regular Players	200	150	90	48	30	12

19. The following data shows the students in millions on rolls at school/University stage in India according to different class groups and sex for the year 1970-71 as on 31st march.

<u>Stage</u>	<u>Boys</u>	<u>Girls</u>	<u>Total</u>
Class I to V	35.74	21.31	57.05
Class VI to VIII	9.43	3.89	13.32
Class IX to XI	4.87	1.71	6.58
University/College	2.17	0.64	2.81

Represent the data by

- (i) Component bar diagram and
(ii) Multiple bar diagram
20. The following data shows the maximum temperature and minimum temperature on a certain day at 10 important cities located at different parts of India.
- | | | | | | | | | | | |
|----------------------|----|----|----|----|----|----|----|----|----|----|
| Maximum Temperature: | 29 | 23 | 25 | 15 | 27 | 29 | 24 | 31 | 32 | 35 |
| Minimum Temperature: | 8 | 3 | 7 | 5 | 8 | 19 | 10 | 7 | 5 | 8 |
- (i) Fit a regression line of X on Y and Y on X
(ii) Estimate the maximum Temperature when the minimum Temperature is 12.
(iii) Estimate the minimum Temperature when the maximum temperature is 40.
(iv) Also calculate Karl Pearson's coefficient of correlation.
21. Explain Different types of Research.
22. What are the different types of sampling techniques? (10 x 3 = 30)