



## V SEMESTER BCOM EXAMINATION – MARCH/APRIL 2022

## SCHEME – SEMESTER – CBCS

194

## QUANTITATIVE DECISIONS AND TOOLS

Time: 03 Hours

Max Marks: 80

Instructions to Candidates: Answer all parts. Case Study is Compulsory

PART-AAnswer any **FOUR** of the following. Each Question carries 5 Marks: 4x5=20

1. Mention the methods of collecting primary data.
2. Given  $Q_3=80$ ,  $Q_1=30$ . Find Quartile deviation and its co-efficient.
3. Explain positive and negative correlation.
4. Given  $\bar{X} = 120$ ,  $\bar{Y} = 100$ ,  $r = +0.78$ ,  $\sigma_x = 90$ ,  $\sigma_y = 70$   
Construct the Regression equation of X on Y.
5. Write a note on time series analysis.
6. State the uses of SPSS package.

PART-BAnswer any **TWO** of the following. Each Question carries 10 Marks: 2x10=20

7. From the following data calculate Mode using grouping and analysis method.

| X        | f   |
|----------|-----|
| 100-200  | 10  |
| 200-300  | 30  |
| 300-400  | 60  |
| 400-500  | 80  |
| 500-600  | 140 |
| 600-700  | 100 |
| 700-800  | 50  |
| 800-900  | 110 |
| 900-1000 | 20  |
| N=       | 600 |

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8. Calculate Spearman's Rank correlation co-efficient from the following data of marks given by 2 judges on 10 exhibits of oil paints.

Marks given by I Judge: 65 62 90 82 75 25 98 36 78 39  
 Marks given by II Judge: 53 58 86 62 68 60 91 51 84 47

9. Construct two Regression equations from the data given below.

X 25 28 30 40 52 57 62 70 76 80  
 Y 22 20 30 35 38 50 55 70 80 80

10. Write the steps involved in calculating Pearson's correlation using SPSS package.

### PART-C

Answer any **TWO** of the following. Each Question carries 15 Marks:  $2 \times 15 = 30$

11. Define statistics. Explain its functions and limitations.

12. Calculate Mean and Median and Mode from the following data.

|    |       |       |       |       |       |       |       |       |        |         |
|----|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|
| CI | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 | 100-110 |
| f  | 4     | 10    | 16    | 29    | 52    | 80    | 32    | 23    | 17     | 7       |

13. From the following bi-variate table. Find Karl Pearson's co-efficient of correlation and its probable error.

| x     | 10-15 | 15-20 | 20-25 | 25-30 | 30-35 | Total |
|-------|-------|-------|-------|-------|-------|-------|
| y     |       |       |       |       |       |       |
| 20-30 | 2     | 3     | 5     | 2     | -     | 12    |
| 30-40 | 5     | 6     | 6     | 2     | 2     | 21    |
| 40-50 | 5     | 7     | 9     | 4     | 2     | 27    |
| 50-60 | -     | -     | 5     | 3     | 2     | 10    |
| Total | 12    | 16    | 25    | 11    | 6     | 70    |

14. From the data given below fit a straight line trend by method of least square and plot it on a graph

| Year | Production<br>(Units) |
|------|-----------------------|
| 2015 | 150                   |
| 2016 | 180                   |
| 2017 | 220                   |
| 2018 | 300                   |

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|      |     |
|------|-----|
| 2019 | 360 |
| 2020 | 420 |
| 2021 | 470 |

PART-D

15. Case Study. Compulsory:

1x10=10

RCB, an IPL cricket franchise, is planning to select its new captain for its team. With a lot of discussion they have come to a conclusion to select a batsman, who is more consistent and a better run getter. They have two options Devdutt Padikkal and Glenn Maxwell who are among the top performers of the last season.

As a statistician you are required to assist in arriving to a conclusion to select the captain using the past performance of these two players which are as follows:

Scores in last 10 innings in IPL.

| Devdutt Padikkal | Glenn Maxwell |
|------------------|---------------|
| 21               | 15            |
| 0                | 51            |
| 41               | 40            |
| 40               | 57            |
| 22               | 50            |
| 0                | 56            |
| 70               | 11            |
| 22               | 10            |
| 7                | 0             |
| 17               | 25            |

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