MS – 305

# II Semester B.Com. Examination, May 2011
## (Semester Scheme)
## COMMERCE
## Business Statistics

Time : 3 Hours Max. Marks : 90

***Instruction :*** *Answers should be written fully in* ***English*** *or in* ***Kannada.***

SECTION – A

Answer **any ten** sub questions from the following. **Each** sub-question carries **2** marks. **(2×10=20)**

1. a) Define the term statistics singularly.

   b) Mention the types of averages.

   c) What is rank correlation ?

   d) Why Fishers index is called ideal ?

   e) List any four methods of studying variation.

   f) If Z = 90, median = 40, find $\overline{X}$.

   g) If variance = 36, $\sum X = 150$, N = 10, find C.V.

   h) If r = 0.6 and N = 64, find probable error.

   i) What is nonsense correlation ?

   j) Mention the methods of calculating consumer price index numbers.

   k) How range is calculated ?

   l) Average weight of 3 students is 60 kgs. The weight of first two students is 50 kg. and 60 kg. respectively. Find the third student weight.



P.T.O.

SECTION – B

Answer **any 5** questions. **Each** question carries **5** marks. **(5×5=25)**

2. Find mode by grouping and analysis table

| **Marks** | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
|---|---|---|---|---|---|---|---|---|
| **Students** | 40 | 50 | 70 | 90 | 85 | 91 | 89 | 65 |

3. Calculate S.D. from the following :

| **Central size** | 15 | 25 | 35 | 45 | 55 | 65 | 75 | 85 |
|---|---|---|---|---|---|---|---|---|
| **Frequency** | 18 | 22 | 30 | 50 | 45 | 30 | 20 | 15 |

4. Find the class intervals if $\overline{X}$ is found to be 35.84 and assumed mean 35.

| **Step Deviation** | –3 | –2 | –1 | 0 | +1 | +2 | +3 |
|---|---|---|---|---|---|---|---|
| **Frequency** | 2 | 12 | 19 | 29 | 20 | 13 | 5 |

5. If $\overline{X}$ is found to be 44.5 find the missing frequency

| **Weight in kgs.** | 10 | 20 | 30 | 40 | 50 | 60 | 70 |
|---|---|---|---|---|---|---|---|
| **No. of Students** | 15 | 20 | 25 | – | 40 | 50 | 20 |

6. Calculate correlation co-efficient between density of population and death rate

| **Density of Population** | 200 | 500 | 400 | 700 | 600 | 300 |
|---|---|---|---|---|---|---|
| **Death Rate** | 10 | 16 | 14 | 20 | 17 | 13 |

7. Calculate cost of living index numbered from the following data.

| **Items** | **Index** | **Weights** |
|---|---|---|
| Food | 323.79 | 50.0 |
| Clothing | 310.00 | 10.0 |
| Lighting | 220.00 | 8.0 |
| Rent | 150.00 | 12.0 |
| Miscellaneous | 300.00 | 20.0 |

8. From the following data :

   a) Calculate the regression equation X on Y.

   b) Estimate the value of X when Y = 40.

| **X** | 20 | 24 | 26 | 34 | 36 |
|---|---|---|---|---|---|
| **Y** | 10 | 12 | 14 | 18 | 26 |

9. Average rainfall at Gowribidanur from Monday to Saturday is 3 cm. Due to heavy rainfall on Sunday the average for the week increased to 5 cm. What was the rainfall on Sunday ?

## SECTION – C

Answer **any three** questions from this Section. **Each** question carries **15** marks. **(3×15=45)**

10. Ten competitors in a "Summer Fall Design Show" Gowribidanur are ranked by three Judges. Using rank correlation find out which pair of Judges have the nearest approach to the common taste in fashion design.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Judge A** | 1 | 3 | 2 | 5 | 8 | 7 | 9 | 4 | 10 | 6 |
| **Judge B** | 3 | 5 | 4 | 6 | 7 | 9 | 8 | 1 | 2 | 10 |
| **Judge C** | 5 | 6 | 2 | 3 | 8 | 7 | 10 | 4 | 1 | 9 |

11. Wages of 100 workers are given below. If median is found to be 33, find the missing frequencies.

| **Wages (in ₹)** | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 |
|---|---|---|---|---|---|---|---|
| **No. of Workers** | 12 | 15 | - | 20 | - | 10 | 10 |

12. Compute Fishers Ideal Index and show that it satisfies the reversability tests.

| **Items** | **Base year** | | **Current year** | |
|---|---|---|---|---|
| | **Value** | **Quantity** | **Value** | **Quantity** |
| **A** | 300 | 150 | 480 | 4 |
| **B** | 50 | 10 | 90 | 6 |
| **C** | 48 | 12 | 50 | 5 |
| **D** | 120 | 60 | 100 | 2 |
| **E** | 60 | 20 | 105 | 3.5 |

13. Find from the following the most consistent Batsman and better run getter

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Batsman A** | 5 | 7 | 16 | 27 | 39 | 53 | 56 | 61 | 80 | 101 | 105 |
| **Batsman B** | 0 | 4 | 16 | 21 | 41 | 43 | 57 | 78 | 83 | 90 | 95 |

14. Find the value of mean, median and mode from the following :

| **Weight in kgs** | 71-75 | 76-80 | 81-85 | 86-90 | 91-95 | 96-100 | 101-105 | 106-110 | 111-115 |
|---|---|---|---|---|---|---|---|---|---|
| **No. of students** | 3 | 10 | 15 | 18 | 25 | 19 | 14 | 9 | 2 |

## ಕನ್ನಡ ಭಾಷಾಂತರ

### ವಿಭಾಗ – ಎ

ಈ ಕೆಳಗಿನ ಯಾವುದಾದರೂ **10** ಉಪ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. ಪ್ರತಿ ಉಪ ಪ್ರಶ್ನೆಗೆ **2** ಅಂಕಗಳು. **(2×10=20)**

1. a) ಏಕ ವಚನಾರ್ಥದಲ್ಲಿ ಸಂಖ್ಯಾಶಾಸ್ತ್ರವನ್ನು ವ್ಯಾಖ್ಯಿಸಿ.

   b) ವಿವಿಧ ಸರಾಸರಿಗಳನ್ನು ನಮೂದಿಸಿ.

   c) ಸಹ ಸಂಬಂಧ ಎಂದರೇನು ?

   d) ಫಿಷರನ ಸೂಚ್ಯಂಕವನ್ನು ಆದರ್ಶ ಎಂದು ಏಕೆ ಕರೆಯುತ್ತೇವೆ ?

   e) ವಿಚಲತೆಯನ್ನು ಅಧ್ಯಯನ ಮಾಡುವ 4 ಬಗೆಗಳನ್ನು ತಿಳಿಸಿ.

   f) $Z = 90$, ಮಧ್ಯಕವು = 40 ಇದ್ದಲ್ಲಿ $\overline{X}$ ನ್ನು ಕಂಡುಹಿಡಿಯಿರಿ.

   g) ಭಿನ್ನತೆ = 36, $\sum X = 150$, $N = 10$ ಇದ್ದಲ್ಲಿ, ಭಿನ್ನತೆಯ ಸಹಗುಣಕವನ್ನು ಕಂಡುಹಿಡಿಯಿರಿ.

   h) ಸಹಸಂಬಂಧ = 0.6, $N = 64$ ಇದ್ದಲ್ಲಿ ಸಂಭವನೀಯ ತಪ್ಪನ್ನು ಕಂಡುಹಿಡಿಯಿರಿ.

   i) ಅಸಂಬದ್ಧ ಸಹಸಂಬಂಧ ಎಂದರೇನು ?

   j) ಜೀವನ ವೆಚ್ಚ ಸೂಚ್ಯಂಕವನ್ನು ಕಂಡುಹಿಡಿಯುವ ವಿಧಾನಗಳನ್ನು ತಿಳಿಸಿ.

   k) ಅಂತರವನ್ನು ಹೇಗೆ ಲೆಕ್ಕಿಸುತ್ತೀರಿ ?

   l) ಮೂವರು ವಿದ್ಯಾರ್ಥಿಗಳ ಸರಾಸರಿ ತೂಕ 60 ಕೆಜಿ. ಮೊದಲೆರಡು ವಿದ್ಯಾರ್ಥಿಗಳ ತೂಕ ಕ್ರಮವಾಗಿ 50 ಕೆಜಿ. ಮತ್ತು 60 ಕೆಜಿ. ಯಷ್ಟಿದೆ. ಮೂರನೆಯ ವಿದ್ಯಾರ್ಥಿಯ ತೂಕವನ್ನು ಕಂಡುಹಿಡಿಯಿರಿ.