

B.Sc. - II (Information Technology) (CBCS Pattern) Semester-III
UBITT306 - Paper-VI - Statistical and Numerical Methods

P. Pages : 2

Time : Three Hours



GUG/S/25/10932

Max. Marks : 40

- Notes :
1. All questions are compulsory and carry equal marks.
 2. Draw neat and labelled diagram and use supporting data wherever necessary.
 3. Avoid vague answer and write specific answers related to questions.

Either :

1. a) Define average. Explain the types of average using example. 4

- b) Calculate mean, median & mode 4

| | | | | | | | | | |
|-----------------|-----|-----|-----|----|----|----|----|-----|----|
| Marks above | 0 | 10 | 20 | 30 | 40 | 50 | 60 | -70 | 80 |
| No. of students | 150 | 140 | 100 | 80 | 80 | 70 | 30 | -14 | 0 |

OR

- c) Calculate lower & Upper Quartile? 4

| | | | | | | | |
|-------------------|----|----|----|----|----|----|----|
| Marks (less than) | 10 | 20 | 30 | 40 | 50 | 60 | 70 |
| | 2 | 6 | 11 | 15 | 18 | 20 | 27 |

- d) Calculate Harmonic mean 4

Value 1 1.5 5 15 250 0.5 0.05 0.095 1245 0.009

Either

2. a) Calculate Range & its co-efficient 4

| | | | | | | |
|-----------|---|---|---|----|----|----|
| Size | 5 | 7 | 9 | 11 | 13 | 15 |
| Frequency | 2 | 3 | 2 | 3 | 2 | 3 |

- b) Calculate Karl Pearson Coefficient of Skewness 4

| | | | | | | |
|----------------|----|----|----|----|----|----|
| Marks | 10 | 20 | 30 | 40 | 50 | 60 |
| No of students | 2 | 3 | 2 | 2 | 2 | 2 |

OR

- c) Calculate Bowley's coefficient of skewness. 4

| | | | | | | |
|----------------|----|----|----|----|----|----|
| Marks | 10 | 11 | 12 | 13 | 14 | 15 |
| No of students | 2 | 4 | 10 | 8 | 5 | 1 |

- d) Calculate mean – deviation from mean & its co-efficient 4

Marks 20 22 27 30 31 32
 35 40 45 48

Either :

3. a) Fit the regression equation of x on y and y on x from the following data 4

| | | | | | | |
|-----|----|----|----|----|----|----|
| x = | 10 | 20 | 30 | 40 | 50 | 60 |
| y = | 15 | 5 | 10 | 25 | 30 | 40 |

obtain the estimate of y when x = 22

- b) From the data given below. Estimate most likely height of father whose son height is 70 inches. 4

| Particular | Mean height | Standard Deviation |
|------------|-------------|--------------------|
| Father | 67 inches | 3.5" |
| Son | 65 inches | 2.5" |

Coefficient of correlation = 0.8.

OR

- c) Find out fisher ideal index number 4

| | 2011 | | 2010 | |
|---------|-------|-------------|-------|-------------|
| Article | Price | Total value | Price | Total value |
| x | 4 | 48 | 5 | 50 |
| y | 7 | 49 | 8 | 48 |
| z | 5 | 20 | 6 | 18 |

- d) Find out index number by 4

1) Laspeyres method

2) Paasche's method

| Commodity | Quantity | | Price | |
|-----------|----------|------|-------|------|
| | 2010 | 2011 | 2010 | 2011 |
| A | 16 | 20 | 50 | 16 |
| B | 5 | 8 | 10 | 15 |
| C | 4 | 6 | 20 | 25 |

Either :

4. a) Explain approximation & error in computing? Write significance of Error. 4

- b) Explain Rounding off write in brief? 4

1) Error in computing

2) Data Error

3) Conversion error

4) Round off error.

OR

- c) What do you understand by minimizing the total error? Explain pitfall and precaution in brief. 4

- d) Differentiate between truncation error and modeling error. 4

5. Solve all the questions

a) Define Arithmetic mean. 2

b) Difference between skewness & Dispersion. 2

c) Explain index number using example. 2

d) Explain Absolute the Relative error. 2
