0235 - Statistics Techniques and Business Mathematics -II

P. Pages : 4   **GUG/W/16/5159**

Time : Three Hours   *0031*   Max. Marks : 80

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Notes :   1.   All questions are compulsory.
2.   All questions are equal marks.

1. a) What is mean by Regression? Write the relationship between correlation and regression?   **8**

b) You are given the following results for the heights (x) and weights (y) of 1000 Business   **8**
Executives.

$\bar{x}$ = 68 inches, $\bar{y}$ = 150, lbs,

SD_x = 2.5 inches, SD_y = 20, lbs, r = 0.60

Estimate from the above data.
i)   The weight of a particular executive who is 60 inches tall
ii)   The height of a particular executive whose weight is 200 lbs.

OR

c) Find correlation coefficient between age and playing habit of the following students.   **16**

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

2. a) Calculate the index number using Bowley's formula from the following data.   **8**

Items	Base year		Current year	
	Quantity	Price	Quantity	Price
A	3	10	3	15
B	15	4	12	4
C	2	6	4	6
D	4	8	6	12
E	4	6	12	6

b) Construct the fisher's Ideal Index number from the following data.   **8**

Commodity	A		B		C		D	
	Price	Qty	Price	Qty	Price	Qty	Price	Qty
Base Year	10	1000	14	1700	5	1200	2	2200
Current year	12	900	8	1400	14	1000	9	800

OR

c) Compute the Index number. by Laspeyres method and paasche's method.   **16**

Article	2015	2015	2010	2010
	Quantity	Price	Quantity	Price
Books	15	238	24	380
Stationary	17	320	28	290
Exercise Books	24	140	17	205
Bags	10	220	12	195
School shoes	5	90	9	110

3. a) Do you find that the temperament of brothers and sisters are independent from the   **8**
following data. Use x^2 test for your answer.

Good natured brothers and good natured sisters- 1230

Good natured brothers and sullen sisters - 850

Sullen brothers and good natured sisters - 530

Sullen brothers and sullen sisters - 980

(Table value of x^2 = 3.84)

b) In a recent diet survey the following results were found in wadsa. **8**

No of families	Community - A	Community - B
Families taking tea	1236	164
Families not taking tea	564	36

Discuss whether there is significant difference between the two communities in the matter of taking tea.
(x^2 = 5.841 at 5% level.)

OR

c) A public opinion poll surveyed a simple random, simple of 100 voters represents were classified by gender and by voting preference. (Republican, Democrat, Independent). Result are shown in the contingency table below. **16**

Gender	Voting preferences		
	Republican	Democrat	Independent
Male	200	150	50
Female	250	300	50

Does the male voting preference differ significantly from female preference.
(x^2 = 9.49 for 5% level at 2 d.f.)

4. a) Some children stand in rows for P.T. the no. of children in a row varies inversely as the no. of rows. If there are 14 children in a row, 6 rows are formed. If 12 children stand in each row, how many rows will be formed? **8**

b) Rupali purchased a mobile @ of Rs. 22,000 and sold it to Nilesh at 10 % profit. Nilesh sold it to customer by taking 10 % profit on it's cost price. At what rate did the customer purchase it? **8**

OR

c) 22 female workers can carry a certain no. of bricks in 40 trips if each carries 18 bricks in a trip. How many trips would 24 workers need to make if each carries 20 bricks in a trip? **8**

d) By selling 180 ballpens for Rs. 360 a person loses 20% How many ballpens should be sold for Rs. 204 as to have a profit of 20% . **8**

5. a) What do you understand by regression? **4**

b) What are the importance of index number? **4**

c) What do you mean by level of significance? **4**

d) Define ratio. State the characteristics of the ratio. **4**

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सूचना :-   1. सर्व प्रश्न अनिवार्य आहेत
              2. सर्व प्रश्नांना समान गुण आहेत.

1. अ) प्रतीपगमन म्हणजे काय? प्रतीपगमन आणि सहसंबंध यातील संबंध लिहा.   **8**

   ब) इंग्रजी माध्यमानुसार.   **8**

<div align="center">किंवा</div>

   क) इंग्रजी माध्यमानुसार.   **16**

2. अ) इंग्रजी माध्यमानुसार.   **8**

   ब) इंग्रजी माध्यमानुसार.   **8**

<div align="center">किंवा</div>

   क) इंग्रजी माध्यमानुसार.   **16**

3. अ) इंग्रजी माध्यमानुसार.   **8**

   ब) इंग्रजी माध्यमानुसार.   **8**

<div align="center">किंवा</div>

   क) इंग्रजी माध्यमानुसार.   **16**

4. अ) इंग्रजी माध्यमानुसार.   **8**

   ब) इंग्रजी माध्यमानुसार.   **8**

<div align="center">किंवा</div>

   क) इंग्रजी माध्यमानुसार.   **8**

   ड) इंग्रजी माध्यमानुसार.   **8**

5. अ) प्रतीपगमनाचा अर्थ काय आहे?   **4**

   ब) निर्देशांकाचे महत्व सांगा.   **4**

   क) लक्षणीय पातळीचा अर्थ सांगा.   **4**

   ड) गुणोत्तराची व्याख्या लिहुन गुणोत्तराचे वैशिष्ट्ये लिहा.   **4**

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सूचनाएँ :-   1.   सभी प्रश्न अनिवार्य है ।
              2.   सभी प्रश्नों के अंक समान है ।

1.   अ)   प्रतीपगमन का क्या आशय है । प्रतीपगमन और सहसंबंध के संबंध लिखिये ।   8

      ब)   अंग्रेजी माध्यम के अनुसार ।   8

                                        अथवा

      क)   अंग्रेजी माध्यम के अनुसार ।   16

2.   अ)   अंग्रेजी माध्यम के अनुसार ।   8

      ब)   अंग्रेजी माध्यम के अनुसार ।   8

                                        अथवा

      क)   अंग्रेजी माध्यम के अनुसार ।   16

3.   अ)   अंग्रेजी माध्यम के अनुसार ।   8

      ब)   अंग्रेजी माध्यम के अनुसार ।   8

                                        अथवा

      क)   अंग्रेजी माध्यम के अनुसार ।   16

4.   अ)   अंग्रेजी माध्यम के अनुसार ।   8

      ब)   अंग्रेजी माध्यम के अनुसार ।   8

                                        अथवा

      क)   अंग्रेजी माध्यम के अनुसार ।   8

      ड)   अंग्रेजी माध्यम के अनुसार ।   8

5.   अ)   प्रतीपगमन का आशय क्या है।   4

      ब)   निर्देशांक के महत्व बताइये ।   4

      क)   लक्षणीय पातळी इसका अर्थ समझाइये ।   4

      ड)   गुणोत्तर की व्याख्या लिखकर उसकी विशेषताएँ बताइयें ।   4

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