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Register Number:

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**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27**

OPEN ELECTIVE - IV SEMESTER

SEMESTER EXAMINATION - APRIL 2018

**STOE: 4116 – Descriptive Statistics**

**Time: 1½hrs Max: 35 Marks**

This question paper has **TWO** printed pages and **THREE** parts

Scientific calculators are allowed. Graph sheets will be provided on request

**SECTION – A**

**I Answer any FIVE of the following: 5 x 2 = 10**

1. DefineStatistics
2. The blood groups of 30 students of Class are recorded as follows:

A, B, O, O, AB, O, A, O, B, A, O, B, A, O, O, A, AB, O, A, A, O, O, AB, B, A, O, B, A, B, O.

Represent this data in the form of a frequency table. Which is the most common blood group?

1. Give classical definition of probability
2. Mention any four requisites of a good questionnaire?
3. Find mean and median from the following data: 12, 6, 7, 4, 14, 6, 8, 9
4. Define Dispersion. Mention any three measures of dispersion
5. Define stratified random sampling

**SECTION – B**

**II Answer any THREE of the following: 3 x 5 = 15**

1. Explain different scales of measurement with examples
2. Arun and Tarun appear for an interview for two vacancies. The probability of Arun's selection is $\frac{1}{3}$ and that of Tarun's selection is $\frac{1}{5}$ . Find the probability that

A)Both of them will be selectedB)At least one of them is selected

C)Only one of them is selected

1. What do you mean by non-sampling errors? How do you control it?
2. The following are the number of orders for a certain product obtained by two salesmen (A & B) of a firm

|  |  |
| --- | --- |
| Salesman A | 60, 40, 20, 35, 40, 20, 10, 15, 70, 40, 15, 20 |
| Salesman B | 30, 20, 25, 35, 30, 20, 15, 20, 40, 45, 25, 15 |

A) Which sales man is getting more order?

B) Who is more consistent in getting orders?

STOE-4116-A-18

1. Ten children were weighed and then had their heights measured. The results are in the table

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Weight(kg) | 47 | 60 | 47 | 49 | 50 | 59 | 46 | 54 | 57 | 53 |
| Height(cm) | 82 | 110 | 95 | 101 | 88 | 121 | 79 | 98 | 105 | 100 |

Calculate the pearsoncorrelation coefficient and comment

**SECTION – C**

**III Answer any ONE of the following: 2 x 10 = 20**

1. A) The table below gives the weekly wages (in Rupees) of 200 employees in a factory.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Weekly wages (in Rs) | 150-170 | 170-190 | 190-210 | 210-230 | 230-250 | 250-270 | 270-290 |
| Number of Employees | 10 | 24 | 36 | 58 | 45 | 15 | 12 |

Compute mean wages of employees. Also find mode graphically (7)

B) Explain any one method of drawing a random sample from finite population (3)

1. A)The following table gives the Percentage of National Income from Agriculture (Y) and Percentage of Illiterates (X) of groups of countries with different per capita incomes.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Income group | I | II | III | IV | V | VI |
| Percentage of National Income from Agriculture | 11 | 11 | 15 | 30 | 33 | 41 |
| Percentage of Illiterates | 2 | 6 | 19 | 20 | 40 | 71 |

Fit a simple linear regression Y on X. Also estimate the Percentage of National Income from Agriculture if the Percentage of Illiterates is 65. (6)

B) Draw a multiple bar diagram for the following data. (4)

|  |  |  |
| --- | --- | --- |
| Year | Profit before tax(in lakhs of rupees) | Profit after tax(in lakhs of rupees) |
| 1998 | 195 | 80 |
| 1999 | 201 | 87 |
| 2000 | 165 | 45 |
| 2001 | 140 | 32 |

STOE-4116-A-18