B. Sc. (Sem. I) Examination

August - 2022

Statistics

Faculty Code : 003

Subject Code : 2011018

Time : $2\frac{1}{2}$ Hours]   [Total Marks : **70**

1 (a) Give the answer of following questions :   **4**

   (1) To collect primary data _____ methods used.

   (2) Measurable variable like no. of accident on road is known as _____ variable.

   (3) The data collected from published reports is known _____ data.

   (4) Population figures published by the Census Commissioner are _____ data.

   (b) Write the characteristics of an ideal questionnaire.   **2**

   (c) Give difference between Direct method and Indirect method of primary data.   **3**

   (d) Explain Direct Enquiry method.   **5**

2 (a) Give the answer of following questions :   **4**

   (1) Statistics deal with _____ information.

   (2) "DIVYA BHASKAR" news paper provide us _____ data.

   (3) Non measurable variable like religion of citizen is known as _____ variable.

   (4) Population size is denoted by _____.

(b) Write notes on Quantitative data. **2**

(c) Explain method questionnaire by post to collect **3**
primary data.

(d) Write notes on secondary data. **5**

3 (a) Give the answer of following question : **4**

(1) State Sterg's rule _____.

(2) If variable is qualitative then _____ made to minimize data.

(3) If the class length of a class is 5 and the mid-value is 52.5, then the lower limit of the class is _____.

(4) If variable is discrete and range of data is less then _____ frequency distribution made.

(b) Define : Range, class length of frequency distribution. **2**

(c) Marks obtained in an examination by the 30 students **3**
are as follows, prepare suitable frequency distribution:
2, 20, 18, 14, 22, 26, 27, 32, 38, 42, 44, 45, 49, 30, 29, 19, 18, 9, 4, 12, 20, 18, 24, 36, 40, 33, 3, 39, 28, 24

(d) There were 1250 skilled and 400 unskilled workers **5**
in a private company in the year 2001. There were 220 female workers and of them, 140 were unskilled. In the year 2002, the number of skilled workers was 1475 and of them, 1300 were males. Out of 250 unskilled workers, 200 were males. In 2003, there were 1700 skilled and 50 unskilled workers. Out of total workers, 250 were females, of them 240 were skilled. In the year 2004, there were 2000 workers and of them, 2% were skilled. Out of total workers, 300 were females and of them, 10 were unskilled. Present the above data in the form of table. Also write suitable title.

4 (a) Give the answer of following questions : 4

    (1) In exclusive classes upper boundary points and upper limits are _____.

    (2) If classes 10 – 20, 20 – 30, 30 – 40... the mid value of 20 – 30 classes is _____.

    (3) If class length C, no of classes K and Range of data is R then CK _____ R.

    (4) _____ is the formula of mid value of class.

(b) Explain class length, range, mid value of class. 2

(c) In a university, out of total 50,000 students, 35% are in commerce faculty, 30% are in arts faculty, 20% are in science faculty, 10% are in engineering faculty and remaining 5% are in medical faculty. The ratio of number of boys and girls in commerce faculty is 4 : 3. In arts faculty, the number of girls is double than that of boys. In science and engineering faculty, there are 60% and 70% boys respectively and in medical faculty, boys and girls are in equal numbers. Represent the above data in appropriate table. 3

(d)

Mid value	25	105	230	400	650	900	Total
Frequency	10	30	40	60	80	30	250
Class length	50	110	140	200	300	200	

5

Obtain the original distribution.

5 (a) Give the answer of following questions : 4

    (1) In circle diagram, area of circle is _____.

    (2) In _____ diagram logical order of bars should be maintained.

    (3) The ogives for more than type and less than type distribution intersect at the _____ point.

    (4) With the help of histogram _____ measure central of tendency find.

(b) Explain a frequency curve in brief. 2

(c) Explain circle diagram. 3

(d) Using following data, draw histogram. 5

Class	10-15	15-20	20-25	25-30	30-35
Frequency	2	8	15	13	4

6 (a) Give the answer of following questions : 4

(1) _____ degrees we take equal to the total data in a pie diagram.

(2) Frequency polygon can be drawn with the help of _____.

(3) If the data are not related to time then they arranged in _____ or _____ order.

(4) There are main _____ type diagram.

(b) Explain a pie diagram in brief. 2

(c) Information regarding the number of students studying in a college in different faculties in a year is given below. Represent it through bar diagram. 3

Faculty	Arts	Commerce	Science	Engineering	Medical	Law
No. of Students	500	1300	900	400	200	3000

(d) The data on monthly expenses of two different families living in a city are given below. Present it through appropriate diagram. 5

Monthly Expenses	Food	Clothing	Education	Fuel	Rent	Other	Total
Family A	8100	2700	2880	1800	1620	900	18000
Family B	7000	2000	2000	3000	4000	2000	20000

7 (a) Give the answer of following questions : 4

   (1) Demand and Price has _____ relation.

   (2) If price increases then supply will be _____.

   (3) If the price of sugar increases from Rs. 4.40 per kilogram to Rs. 5.20 per kg. and its demand decreases from 1200 kg to 800 kg., then elasticity of demand is _____.

   (4) If the price of Joggery increases from Rs. 2 per kilogram to Rs. 3 per kg. and its supply increases from 2000 kg to 2500 kg., then elasticity of supply is _____.

   (b) If the demand law $x = 4\left(9 - \sqrt{p}\right)$. Find the elasticity 2
        of demand when $p = 4$. Also interprete it.

   (c) When price is Rs. 3 and demand is 12000 kg. When 3
        price is Rs. 5. Then demand is 800 kg and demand
        law is $p = \sqrt{a - bx}$. Find value of constants. Also find
        demand when price is Rs. 7.

   (d) Write notes on elasticity of demand. 5

8 (a) Give the answer of following questions : 4

   (1) If $x = 15 - \dfrac{1}{2}p$ then it is a function of _____.

   (2) If $x = \left(6 + 5p\right)^2$ then it is a function of _____.

   (3) The price at which the quantity of demand and quantity of supply are equal is called _____.

   (4) _____ has defined elasticity of demand.

(b) If the cost function is $C = x^3 + 7x^2 + 5x + 200$, find **2**
Marginal cost and Average cost functions.

(c) Demand law $D : x = 130 - 4p$ and supply law **3**

$S : P = 10 + \dfrac{2}{5}x + \dfrac{x^2}{10}$. Find equilibrium price and quantity.
Also find demand when $P = 0$.

(d) Obtain relation between Average revenue, Marginal **5**
revenue and elasticity of demand.

9 (a) Give the answer of following questions : **4**

(1) In computer second generation interval is from
_____ to _____.

(2) Desktop computer is known as _____.

(3) Hardware, software, data and _____ are the
part of computer system.

(4) Input, storage, _____ and output are the
operations of computers _____.

(b) What are the difference between hardware and software? **2**

(c) Explain Ring network topology. **3**

(d) Explain function units : ALU, CU and CPU. **5**

10 (a) Give the answer of following questions : **4**

(1) In computer third generation interval is from
_____ to _____.

(2) ALU, CU and _____ are the parts of functional
unit.

(3) Excel files are called _____.

(4) Two typical components of a CPU are _____
and _____.

(b) Explain fully connected bus network topology.   **2**

(c) Write required steps to create Column chart   **3**
      (Bar Diagram) in MS-Excel.

(d) Explain System Software.   **5**

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