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M.C.A. - I (Management)

BST504MJ : MT 11 : BUSINESS STATISTICS

(2024 Pattern) (Semester - I)

Time : 2½ Hours] ***[Max. Marks : 50***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Use scientific (non-programmable) calculator.***
3) ***Figures to the right indicate full marks.***

Q1) a) Solve any one **[5]**

i) Write a note on limitations and importance of Statistics

ii) Write a note on types of data.

b) Solve any one **[5]**

i) Draw a bar diagram from the following data about the raw materials imported by a country "S":

Raw Materials	Aluminum	Copper	Iron	Silver
Import in Crores (Rs.)	135	120	170	80

ii) Represent the following data by means of a Histogram:

Weekly Wages (in Rs.):	20-24	25-29	30-34	35-39	40-44	45-49
No.of Workers:	6	18	25	14	10	8

Q2) a) Solve any one **[5]**

i) Calculate the median of the following data.

Marks	35-45	45-55	55-65	65-75	75-85	85-95
No of Students	5	7	15	27	14	2

ii) Calculate the Harmonic mean of marks scored by a student in 7 subjects given below: 61, 68, 69, 63, 70, 60, 78.

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b) Solve any one **[5]**

i) The weight of 10 ampicillin ampoules in grams is as follows: 2,3,2,4,3, 4,5,4,2, 1 Calculate standard deviation (SD), variance and coefficient of variation.

ii) Compute M.D. about median and coefficient of M.D. about median for the prices per 10 kg of sugar for 7 days in a certain week. 81, 83, 85, 82, 80, 78,79.

Q3) a) Solve any one **[5]**

i) A bag contains 3 yellow marbles, 2 green marbles and 5 red marbles. If one marble is drawn at random, what is the probability that it is either yellow or green?

ii) Two dice are rolled. What is the probability that the sum of the two dice is atleast 7?

b) Solve any one **[5]**

i) If the number of trials of a certain binomial distribution is 25 and the probability of success is 0.36. Find the mean, standard deviation and coefficient of variation.

ii) A normal variable X has mean 20 and standard deviation 4.

Find the probability that

i) X lies between 16 and 24,

ii) X is greater than 26.

Q4) Solve any one **[10]**

a) Calculate the Karl Pearson coefficient of correlation between the ages of plants and their growth in a field, given as follows:

Age in weeks (x)	1	2	3	4	5	6
Female Pharmacist	7	11	14	19	24	29

b) Calculate regression coefficients and the value of coefficient correlation.

X	5	1	2	1	0	2	1	3
Y	1	1	7	5	1	3	2	0

Q5) Solve any one **[10]**

a) The profit of a company for eight consecutive years is given below:

2016	2017	2018	2019	2020	2021	2022	2023
80	90	100	110	115	120	130	140

Find the trend values by the three-year moving average method and plot the trend line.

b) The following table shows quarterly production of a commodity (in tons):

Quarter	2018	2019	2020	2021
Q1	250	270	300	310
Q2	200	220	250	260
Q3	150	160	170	180
Q4	220	230	250	270

Compute the seasonal indices by the ratio-to-moving-average method.

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