S.D.E.

M.B.A. Sem-I (2013 Course) : SUMMER - 2019

SUBJECT : STATISTICAL TECHNIQUES

Day : Wednesday
Date : 08/05/2019

S-2019-5013

Time : 10.00 AM TO 1.00 PM
Max. Marks : 70

N.B.

1) Attempt **ANY FOUR** questions from Section – I and **ANY TWO** questions from Section – II.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Answer to both the sections should be written in SAME answer books.
4) Use of non-programmable scientific calculator is allowed.
5) Graph papers will be provided if required.

SECTION – I

Q.1 For the following data find the coefficient of variation 14, 15, 22, 23, 80, 31, 44, 56, 79, 65. **(10)**

Q.2 From the following data of income distribution calculate arithmetic mean, median and mode. **(10)**

Income	20-30	30-40	40-50	50-60	60-70	70-80	80-100
No. of persons	16	20	25	15	11	8	5

Q.3 Estimate Karl Pearson's coefficient of correlation between the age and playing Habit of people from the following information. **(10)**

Age group (yrs.)	15	20	25	30	35	40
No. of people	75	60	50	50	45	40

Q.4 The mean runs scored by three batsmen A, B and C in the same series of 10 innings are 50, 48 and 12 respectively. The standard deviations of their runs are 15, 12 and 2 respectively. Using coefficient of variation, find who is the most consistent of the three? Why? **(10)**

Q.5 Write short note on **ANY TWO** of the following. **(10)**

i) Coefficient of Variation
ii) Types of correlation
iii) Independent events

SECTION – II

Q.6 The following data refers to the age distribution of employees working in a large company **(15)**

Age (in years)	Number of employees
20-25	30
25-30	160
30-35	210
35-40	180
40-45	140
45-50	105
50-55	70
55-60	60
60-65	40
65-70	5

a) Find arithmetic Mean and Mode.
b) Draw 'less than' and 'more than' Ogives and locate median graphically.

P.T.O.

Q.7 Given the following data : **(15)**

X	7	9	7	12	12	11	14	16
Y	3	12	12	14	14	16	18	20

i) Fit the regression equation of Y on X.
ii) Estimate the value of y for X = 15.

Q.8 a) In a company, it is found that the probability for a worker who attended a training programme to meet his production quota is 0.92 while for a worker who did not attend the programme, this probability is 0.42. If 72 % of the workers have had training programme, what is the probability that a randomly selected worker would meet the production quota? If a randomly selected worker is one who met the production quota, what is the probability that he did not attend the training programme? **(07)**

b) Following table gives Pay offs for action A_1, A_2, and A_3 corresponding to states of nature S_1 and S_2 with probabilities 0.6 and 0.4 **(08)**

States of Nature	Probability	A_1	A_2	A_3
S_1	0.6	16	20	18
S_2	0.4	19	15	12

Find decision under
i) EMV criterion
ii) Maximin criterion

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