SECTION II

Q2 Solve any four out of the following six questions (5 Marks each)

a. Calculate Bowley's coefficient of skewness for the following distribution

Class	30-35	35-40	40-45	45-50	50-55	55-60
Frequency	5	10	30	35	15	5

b. The mean weekly sales of chocolate bar in candy stores was 146.3 bars per store. After an advertising campaign the mean weekly sales in 22 stores for a typical week increased to 153.7 and showed a standard deviation of 17.2. Was the advertising campaign successful?.

[Given the table value of 't' at 5% level of significance for degrees of freedom 21 is 1.721]

c. In a railway reservation office two clerks are in checking reservation forms. On an average the first clerk checks 55% of the forms while the second does the remaining. The first clerk has an error rate 0.3 and the second has an error rate of 0.2. A reservation form is selected at random and is found to have an error. What is the probability that it was checked by the first clerk?

d. The probability distribution of a bivariate random variable(X,Y) is given below

Y \ X	1	2	3	Total
1	0.1	0.1	0.2	0.4
2	0.2	0.3	0.1	0.6
Total	0.3	0.4	0.3	1

Find E(X+Y) and E(XY)

e. A binomial variable X satisfies the relation 9P(X=4)= P(X=2) ,when n=6 find the value of parameter P.

f. Find the co-efficient of variation for the following data

X	20-40	40-60	60-80	80-100	100-120	120-140

f	7	12	16	13	13	4

Q3. Solve any two questions out of three which carry 10 marks each respectively. -

a. Find the Karl Pearson's coefficient of correlation from the following data

X	62	64	65	69	70	71	72	74
Y	126	125	139	145	165	152	180	208

b. Find the line of regression for the following data and estimate y corresponding to x=15.5

X	10	12	13	16	17	20	25
Y	19	22	24	27	29	33	37

c. The joint probability density function of a two dimensional random variable (X,Y) is given by $f(x,y)= k, \quad 0\leq x\leq y\leq 2$. Find the value of k and also the marginal and conditional density functions