F.Y.B.SC. SEM – II (2014 Course) : WINTER - 2018

SUBJECT : STATISTICS : DESCRIPTIVE STATISTICS – II (S – 21)

Day : Wednesday
Date : 17/10/2018

Time : 03.00 PM TO 05.00 PM
Max. Marks : 40

W-2018-0790

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Use of statistical tables and **CALCULATOR** is allowed.

Q.1 Attempt **ANY TWO** of the following: **[10]**

a) Write the expression for regression lines. Also state their utility.

b) Obtain Spearman's rank correlation coefficient for the following data:

X	27	30	20	28	11
Y	19	20	16	11	21

c) Obtain Karl Pearson's correlation coefficient for the following data:

X	8	12	9	23	13
Y	15	20	19	33	22

Q.2 Attempt **ANY TWO** of the following: **[10]**

a) Obtain the regression line of Y on X for the following data:

X	7	9	10	12	15
Y	10	12	14	15	16

b) Two regression lines are given by $X + 2Y - 5 = 0$ and $2X + 3Y - 8 = 0$. Calculate mean values of X and Y and correlation coefficient between X and Y.

c) What is scatter diagram? Explain how it helps as measure of correlation.

Q.3 Attempt **ANY TWO** of the following: **[10]**

a) Compute Lasperyre's and Paasche's price index number for the following data:

Commodity	Base year Price	Base year Quantity	Current year Price	Current year Quantity
A	9	5	15	5
B	8	10	12	11
C	4	6	5	6

b) Define index number. Explain problems in construction of index number.

c) If X and Y are uncorrelated, show that $Var(X + Y) = Var(X - Y)$.

Q.4 Attempt **ANY FIVE** of the following: **[10]**

a) Define Positive correlation.

b) State uses of index number.

c) State the general equation of exponential curve and second degree curve.

d) Given : $\sigma_x = 2$, $\sigma_y = 3$, $r = 0.8$. Find Cov(X, Y).

e) Show that $b_{yx} . b_{xy} = r^2$.

f) If corr(X, Y) = 0.6, find Corr(2X, – Y).

g) Lasperyre's and Paasche's price index numbers are 120 and 130 respectively. Find Fisher's Price index number.

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