Professor Vishwanathan Iyer's

HERAMB COACHING CLASSES

XII/ MATHS **Marks: 40** **Duration: 1.30 HOURS** **Date: 27/06/2018**

Q.NO.1 ATTEMPT ANY TWO: (10 marks)

(A) Write the symbolic form of given statement

a)Either we play kabaddi or go for cycling.

b)The drug is effective though it has side effect.

(B) Examine, whether each of the following statement pattern is a tautology or contradiction:

a)$(p \wedge q) \vee (\sim p \vee \sim q)$ b) $(p \wedge \sim q) \leftrightarrow (p \rightarrow q)$

(C) Write the negation of the following :

(i) Economic growth and per capita income is more in America.

(ii) Rajani is rich if and only if she is a doctor.

Q.NO. 2 ATTEMPT ANY TWO: (10 marks)

(A) Compute the correlation coefficient by Karl Pearsons method between X and Y interpret the result

X	11	12	14	16	12	17	18	19	20	17
Y	8	9	10	12	9	13	14	13	15	12

(B) The following data give the marks of 20 students in Mathematics (x) and Statistics (y) each out of 10 expressed as (x,y) . Construct the distribution table considering the single number as a class. Also prepare the marginal tables: (2,7) , (3,8), (4,9) , (2,8) , (2,8) , (5,6),(5,7) , (4,9) , (3,8) , (4,8) , (2,9) , (3,8), (4,8) , (5,6) , (4,7) , (4,7) , (4,6), (5,6) , (5,7) , (4,6).

(C) Find the rank correlation for the following data:

Marks in maths	70	70	65	60	55	50	40	30
Marks in accounts	80	60	80	70	65	50	42	28

Q.NO.3 ATTEMPT ANY TWO: (10 marks)

(A)) Obtain the two regression equations for given data

X	11	7	9	5	8	6	10
Y	10	8	6	5	9	7	11

(B) The two regression equation are $2x + 3y = 6 \; and \; 5x + 7y = 12$ find the mean values of x and Y .Also find r .

(C) The equations of two regression lines are $3x + 2y - 26 = 0 \; and \; 6x + y - 31 = 0$ .Find

I. Means of X and Y
II. correlation coefficient

Q.NO.4 ATTEMPT ANY TWO: (10 marks)

(A)

Age group	Population	No. of death
0 – 20	40,000	350
20 – 65	65,000	650
65 and above	15,000	x

Using the information find, x if the CDR=13.4 per thousand.

(B) Given $l_{26} = 9046, l_{27} = 8898 \; and \; T_{26} = 36000$ find the values of L_{26} , $T_{27} \; and \; e_{26}^{0}$.

(C) Complete the life table for

X	0	1	2	3	4	5	6	7
l_x	100	90	75	50	30	15	5	0