SS – 473

III Semester B.Com. Examination, November/December 2018
(Semester Scheme) (CBCS) (F + R) (2015-16 and Onwards)
COMMERCE
3.6 : Quantitative Analysis for Business Decisions – II

Time : 3 Hours Max. Marks : 70

Instructions : *Answers should be written completely either in* ***English*** *or in* ***Kannada****.*

SECTION – A

1. Answer **any five** of the following sub-questions. **Each** sub-question carries **2** marks. **(5×2=10)**
   a) What is a linear correlation ?
   b) What are the regression lines ?
   c) State the components of time series.
   d) Expand $(y - 1)^5 = 0$.
   e) What is sampling distribution ?
   f) What do you mean by population of universe ?
   g) What are independent events ?

SECTION – B

Answer **any three** of the following questions. **Each** question carries **6** marks. **(3×6=18)**

2. Find the rank correlation for the following data and give your comments :

Marks in Accounts (X) :	84	56	89	58	59	67	74	78
Marks in Maths (Y) :	38	69	56	58	63	78	87	77

3. You are given the following data :

Variables	**X**	**Y**
Mean	47	96
Variance	64	81
Correlation co-efficient between X and Y	0.36	

Calculate the regression line X on Y and also calculate X when Y = 88.

4. Interpolate the exports made in 2014 from the following using Binomial expansion method.

Year	2012	2013	2014	2015	2016	2017
Exports (Crores ₹)	210	230	?	280	300	350

P.T.O.

5. What are different non-probability sampling techniques ?
6. The probability of an Indian having a car is 26%, the probability of Indian having a house is 40%. The probability of Indian owning a car and a house is 18%. What is the probability that Indian owns a car or a house ?

SECTION – C

Answer **any three** of the following question. **Each** question carries **14** marks. **(3×14=42)**

7. From the following table, find out Karl Pearson's co-efficient of correlation between age and reading habits of students.

Age :	15	16	17	18	19	20
No. of students :	250	200	150	120	100	80
Regular Readers :	200	150	90	48	30	12

8. From the following data :
   a) Calculate two regression equations.
   b) Estimate the value of X when Y = 80 and Y when X = 90.
   c) Determine the value of correlation co-efficient through the regression co-efficients.

X	40	48	52	68	72
Y	20	24	28	36	52

9. The following are the annual profits of a certain business.

Year's	2011	2012	2013	2014	2015	2016	2017
Profits (in'000's)	65	77	80	70	85	90	100

   a) Fit a straight line trend to these figures by the method of least squares.
   b) Estimate the profit for the year 2021.
   c) Plot the actual and trend values on a graph.

10. Estimate the steel production for the year 2013 and 2015 with the help of the following table :

Year :	2010	2011	2012	2013	2014	2015	2016
Steel Production (in '000 tonnes)	150	180	220	?	330	?	450

11. The following are the annual premium charged by an Insurance company for a policy of Rs. 1,000. Estimate the premium payable at the age of 26 by using Newton's method.

Age (in years)	20	25	30	35	40
Premium (₹) (for ₹ 1,000 policy)	23	26	30	35	42