

# ST. JOSEPH'S EVENING COLLEGE (AUTONOMOUS)

## IV SEMESTER B.COM EXAMINATIONS - APRIL 2019

### QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS -- II

Duration: 2.5 Hours

Max. Marks: 70

#### SECTION - A

I) Answer any EIGHT of the following questions. (8x2=16)

1. Write any two properties of Regression.
2. Mention any two uses of interpolation and extrapolation in statistics.
3. What is time series?
4. What is probable error? Write the formula to find it.
5. State the difference between positive and negative correlation.
6. What is correlation?
7. What do you mean by Stratified Random sampling?
8. If  $A = [2,4,6]$   $B = [3,6]$   $C = [4,5,6]$  Find  $A \cap B \cap C$  and  $A \cup B$
9. Write any two limitations of sampling.
10. Give two examples for the term Sample space.
11. What is parameter?
12. How do you determine sample size?

#### SECTION - B

II Answer any THREE of the following questions. (3x8=24)

13. The following are the marks in Maths (x) and marks in Hindi (y) of 10 students in an examination. Find the coefficient of rank correlation.

x	29	32	53	47	45	32	70	45	70	53
y	56	60	72	48	72	35	67	67	75	31

14. Explain the components of time series with examples.
15. Two fair dice are rolled. Find the probability that
- (i) both the dice show number 6
  - (ii) the sum of the numbers obtained is 7
  - (iii) the sum of the number is less than 11
  - (iv) the sum is divisible by 6
16. The following data relate to the production of the firm. Interpolate the missing figures using binomial expansion method.

Years	2005	2006	2007	2008	2009	2010	2011
Population ('000)	200	220	260	?	350	?	430

17. a. what is Standard error? State the uses of standard error.
- b. With sample size of 400, the calculated standard error of mean is 2 with a mean =120. What sample size would be required so that we could be 95 percent confident that the population mean within  $\pm 3.5$  of the sample mean.

### SECTION - C

**III Answer any TWO of the following questions.**

**(2x15=30)**

- 18 Find Karl Pearson co-efficient of correlation between sales and expenses of the 10 firms. Find the probable error for the same.

Sales (000)	105	104	102	101	100	99	98	96	93	92
Expenses (000)	101	103	100	98	95	96	104	92	97	94

- 19 Obtain two regression equations from the following data. Find the value of x when y =30 and value of y when x = 20

X	27	27	27	28	28	29	29	29	30	31
Y	18	18	19	20	21	21	22	23	24	25

- 20 From the following data, find the number of workers earning below Rs.250 per day. Use Newton's method of advancing difference method.

Wages in rupees per day	No. of workers
Below 100	60
Below 200	150
Below 300	300
Below 400	500
Below 500	700
Below 600	800

- 21 For the following data regarding the students admission for B.Com course is given below, fit a linear trend by the method of least squares. Also estimate the number of students admitted to the B.com course in the year 2016. Plot the same on the graph.

Year	2000	2002	2004	2006	2008	2010	2012	2014
Number of students admitted	400	420	450	510	540	520	580	600