Seat No.

**B.Com. (Part - II) (Semester - IV)
Examination, December - 2019
STATISTICS
Business Statistics (Paper - II)
Sub. Code : 63124**

Day and Date : Monday, 9- 12 - 2019          Total Marks : 50
Time : 12.00 noon to 02.00 p.m.

Instructions :    1)    Attempt any five questions.
                  2)    Use of calculator is allowed.
                  3)    Graph papers will be supplied on request.
                  4)    Figures to the right indicate full marks.

**Q1)** a)    Draw a neat sketch of normal curve and state its properties.          **[5]**

   b)    If $P(A) = 0.3$, $P(B) = 0.6$, A & B are independent events.          **[5]**

   Find the probability that

   i)    both will happen

   ii)    at least one will happen

**Q2)** Define time series. State the components of time series. Explain any one of them.          **[10]**

Compute 3 yearly moving average from the following data. Plot trend values and actual values on same graph.

| Years : | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|
| Values : | 5 | 10 | 18 | 12 | 9 |

| 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|
| 16 | 14 | 10 | 11 | 13 |

*P.T.O.*

**Q3)** What is statistical quality control (SQC)? Explain chance and assignable causes. Construct mean chart & comment. [10]

| Sample : No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Mean: | 43 | 49 | 37 | 44 | 45 | 37 | 51 |
| Range: | 5 | 6 | 5 | 7 | 7 | 4 | 8 |

|  | 8 | 9 | 10 |
|---|---|---|---|
|  | 46 | 47 | 47 |
|  | 6 | 4 | 6 |

[Given for $n = 5$, $A_2 = 0.58$, $D_3 = 0$, $D_4 = 2.11$].

**Q4)** What is index number? Define Fisher's price index number. Find Fisher's price index numbers comment. [10]

| Item | Base Year | | Current Year | |
|---|---|---|---|---|
|  | Quantity | Value | Quantity | Value |
| A | 2 | 240 | 3 | 390 |
| B | 5 | 75 | 6 | 120 |
| C | 4 | 52 | 5 | 65 |

**Q5)** Define Binomial distribution. State the properties of Binomial distribution. A fair coin is tossed 10 times. [10]
Find the probability of getting exactly 4 heads.

**Q6)** State addition and multiplication Laws of probability. Define complementary event. [10]
A can solve the problem 2 times is 5. B can solve it 3 times in 5. If both attempt, find the probability that
a) The problem will be solved
b) The problem will not be solved.

**Q7)** a) Explain the construction of C-chart. [5]
b) Obtain paadche's quantity index number if $Q_{01}(F) = 87.50$, $Q_{01}(La) = 88.55$. [5]

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