B. B. A. (Sem. IV) (CBCS) Examination

March / April - 2018

Statistics for Business Decision

(New Course)

Time : $2\frac{1}{2}$ Hours]   [Total Marks : **70**

1 (a) Explain Quality and Quality control.   **7**

(b) Draw an appropriate chart and state your comment :   **7**

Sample No :	1	2	3	4	5	6	7	8	9	10	11
No. of Defects :	8	4	5	6	2	4	3	1	0	4	5

OR

1 Draw $\bar{x}$ and R chart and comment on it. [sample size = 5]   **14**

$\bar{x}$:	100	125	90	95	96	100	85	80	110	120
R :	4	8	12	10	16	8	4	3	6	2

2 (a) Explain Moving average method, also write its advantages.   **7**

(b) Fit $y = a + bx$ and estimate y when $x = 2010$.   **7**

x :	1990	1992	1993	1995	1996
y :	2	3	7	10	8

OR

2 Taking $\alpha = 0.6$ and initial value as 95, determine the sales forecasts for the respective year using Exponential smoothing method :   **14**

Year :	1990	1991	1992	1993	1994	1995
Sales :	114	120	121	130	135	142

3 (a) Explain the following terms :   **7**

    (1) Act

    (2) Pay off matrix

    (3) Event or state of nature.

(b) From the following pay off table, determine best   **7**
act using :

    (1) Max-max principle

    (2) Horwich principle

    (3) Min-max Regret

<div align="center">

Acts

		A_1	A_2	A_3	A_4
	S_1	8	−2	6	10
Events	S_2	14	6	5	4
	S_3	−2	−3	−6	−6

</div>

<div align="center">OR</div>

3 The cost of making an item is Rs. 35, selling price of   **14**
an item is 50, unsold item could be returned at Rs. 25 at
the end of week. The demand of an item is given below :

Demand :	4	5	6	7	8
Prob.	0.1	0.2	0.3	0.3	0.1

Find EVPI.

4 (a) Explain :   **7**

    (i) Type I and Type II error

    (ii) Level of Significance.

(b) A Sample of 150 students has average weight of 65 kg   **7**
and S.D. of 18 (kg)^2. Test the hypothesis that average
weight of students is 67.3 kg.

<div align="center">OR</div>

4 (a) The S.D. of height of 100 MBA students is 4 cm,   7
        and another 200 MCA student is 3 cm. Test the
        significance of the standard deviation on the assumption
        that the S.D. of the height of PG students is 3.3 cm.

   (b) In a sample of 300 students, 48 students read in   7
        library. Test the hypothesis that 20% students are read
        in library.

5 (a) Explain paired t-test and write its steps to test   7
        the hypothesis.

   (b) From the following data test the hypothesis that the   7
        two samples are drawn from population of equal
        variances.

   $$n_1 = 10, \quad n_2 = 12, \quad \sum\left(x_1 - \bar{x}_1\right)^2 = 240, \quad \sum\left(x_2 - \bar{x}_2\right)^2 = 361$$

OR

5 Marks obtained by two students X and Y were given   14
   below :

Marks for X :	28	30	32	33	33	29	34
Marks for Y :	29	30	30	24	27	29	–

   Test the hypothesis that average score of both the students
   are equal.