



DAH-19BBA403

Seat No. _____

B. B. A. (Sem. IV) (CBCS) (W.E.F. 2019) Examination

April - 2022

Statistics For Business Decisions

(New Course)

Time : **2.30** Hours]

[Total Marks : **70**

Instruction : Attempt all the questions.

- 1 (a) Explain briefly meaning, scope and elements of Decision theory. **10**
- (b) A magazine vendor estimates the probability of the demand of the magazine as follows : **10**

Demand of Magazine :	1	2	3	4
Probability :	0.3	0.4	0.1	0.2

Each copy of the magazine costs him Rs. 12 and its selling price is Rs. 14. The unsold copies of the magazine can be returned at Rs. 10 per copy. How many copies should he purchased daily ?

OR

- 1 (a) Explain the following terms with example : **10**
- (i) Maxi-min principle
- (ii) Maxi-max principle
- (iii) Horwich principle
- (iv) Laplace principle
- (b) From the following pay-off table, find the best act according to EMV and EOL criteria. Also find EVPI. **10**

Events	Acts				Probability
	A_1	A_2	A_3	A_4	
S_1	50	10	60	80	0.25
S_2	0	30	45	40	0.40
S_3	80	35	30	45	0.35

- 2 (a) Discuss the causes of variations in production process. 10
 (b) The number of defects per each group containing 10 radio-sets are given below. Draw C-chart and give your comments. 10

Group No. :	1	2	3	4	5	6	7	8	9	10
Number of defects :	12	8	10	16	14	10	2	6	12	9

OR

- 2 The following table gives mean and range of 10 samples each of size 5. Draw \bar{X} and R charts and state your conclusion. 20

Sample No.	1	2	3	4	5	6	7	8	9	10
\bar{X}	43	49	37	44	45	37	51	46	43	47
R	5	6	5	7	7	4	8	6	4	6

(For $n=5$, $A_2 = 0.58$, $D_3 = 0$, $D_4 = 2.11$)

- 3 (a) Explain Moving Average Method of forecasting. 7
 (b) Fit a straight line to the following data and from it estimate the production for the year 1998. 8

Year	1992	1993	1994	1995	1996
Production	40	50	62	58	60

OR

- 3 By taking $\alpha=0.4$ and initial forecast as 100, determine the production forecast for different years. 15

Year	2001	2002	2003	2004
Market Value	150	160	155	170

- 4 (a) Explain briefly Simple random sampling. 7
 (b) Differentiate between Population survey and Sample survey. 8

OR

- 4 (a) Give the advantages of Sampling. 7
 (b) State properties of good estimator. 8