



DAK-161100010403

Seat No. _____

B.B.A. (Sem. IV) (CBCS) (W.E.F. 2016) Examination

April – 2022

Statistics for Business Decisions

(Old Course)

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

- Instructions :** (1) All questions carry equal marks.
(2) Figures to the right indicate marks.

- 1 (a) Explain the following terms : 7
(i) Act
(ii) Event
(iii) Pay off matrix
(b) From the following payoff matrix determine best act using. 7
(i) Maximin principle
(ii) Laplace principle

		<i>Act</i>		
		A_1	A_2	A_3
<i>Event</i>	E_1	20	30	25
	E_2	12	8	10
	E_3	15	10	18

OR

- 1 The small industry finds from the past data that the cost of making an item is Rs. 25, the selling price is Rs. 30 if it is sold within a week, and it could be disposed of at Rs. 20 per item at the end of the week. The demand of an item is given below. 14

Demand:	4	5	6	7
Prob.:	0.10	0.20	0.40	0.30

Find :

- (i) Maximum EMV
(ii) Optimal act and EVPI

- 2 (a) What is business forecasting ? Explain its importance. 7
 (b) Fit a straight line to the following data and from it estimate the price for the year 2022. 7

Year:	2015	2016	2017	2018	2019	2020	2021
Price:	3	4	6	10	13	15	19

OR

- 2 Using exponential smoothing method determine the forecasts for different year taking initial estimate as 100 and $\alpha = 0.40$. 14

Year:	2011	2012	2013	2014	2015	2016
Value:	110	120	121	125	124	122

- 3 (a) Write short note on theory of runs. 7
 (b) Write difference between variable charts and attribute charts. 7

OR

- 3 Draw \bar{X} and R charts for the following data and state your conclusions. 14

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

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

- 4 (a) Explain : 7
 (i) Null hypothesis and alternative hypothesis.
 (ii) Type I error and type II error.
 (b) A coin is tossed 400 times and it turns up head 216 times, is the coin unbiased ? 7

OR

- 4 The information regarding marks of boys and girls of a college is given below. 14

Sample:	Mean	S.D.	Sample size
Girls:	78	12	80
Boys:	75	15	120

Test : (i) $H_0 : \mu_1 = \mu_2$, (ii) $\sigma_1 = \sigma_2$

- 5 (a) Explain the difference between large sample test and small sample test. 7
- (b) 10 oil tins are taken at random from an automatic filling machine. The mean weight of the tins is 14.5 kg and standard deviation is 0.50 kg. Does the sample mean differ significantly from the intended weight of 15 kg ? 7

OR

- 5 Two samples are drawn from two normal populations. Test the significance of equality of two variances. 14

<i>Sample I :</i>		7	3	13	14	10	9	
<i>Sample II :</i>		2	8	17	10	7	9	13
