647510 **BBA4StaA407x** **Seat No :_____**

B.B.A. Semester - 4 (*CBCS*) Examination
March/April-2026 [NEW COURSE]
Statistics for Business Decision Making(Allied)

Time: 2:30 Hours **Marks: 70**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate marks.

Que.1 (A) Write a short note on Decision theory (07)

(B) The manufacturing price of a commodity is Rs. 50 and sales price is Rs. 90. The product is vested after a week. The past record of sales is as follows: (07)

Demand per week :	20	21	22	23	24
No. of weeks :	200	300	400	600	500

Prepare a pay-off table and calculate EMV and EPPI.

OR

Que.1 (A) Write a short note on Horwich's principle (07)

(B) From the following data, take optimal decision under (i) Maximin criterion (ii) Maximax criterion (iii) Minimax regret criterion and (iv) Laplace criterion (07)

Events	Acts		
	A_1	A_2	A_3
E_1	700000	500000	300000
E_2	300000	450000	300000
E_3	150000	0	300000

Que.2 Draw $\bar{x}$ & R Chart and Comment on it. (14)

$\bar{x}$	100	125	90	95	96	94	85	80	120	110
R	4	8	10	10	15	11	0	2	0	12

[n=5, A_2=0.577, D_3=0, D_4=2.115]

OR

Que.2 Write short notes on :

(1) Rational sub grouping (2) Theory of runs

Que.3 (A) What is business forecasting? Explain its importance. (07)

(B) Find trend by 3 yearly moving averages for the following data : (07)

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Index Number	112	104	108	121	116	111	133	125	129	139	131

OR

Que.3 Using the method of exponential smoothing taking initial estimate as 100, the value of $\alpha = 0.4$. Prepare forecasts table. (14)

Year	2019	2020	2021	2022	2023	2024
Sales	104	108	120	115	118	125

Que.4 (A) Write short note on Level of Significance. (07)

(B) A sample of 900 members is found to have a mean of 3.4 cm. Can it be reasonably regarded a simple sample from a population with mean 3.25 and S.D. 2.61 cm? (07)

OR

Que.4 (A) A sample of the heights of 6400 Englishmen has a mean of 170cm. And a S.D. of 6.4cm while a sample of heights of 1600 Australians has a mean of 172cm and a S.D. of 6.3cm. Do the date indicate that Australians are on the average taller than the Englishmen. (07)

(B) In a large city A, 20% of a random sample of 900 school boys had defective eye-sight. In another large city B, 15.5% of a random sample of 1600 school boys had the same defect. Is the difference between two proportions significant? (07)

Que.5 (A) What is pair t-test ? Explain how it can applied. (07)

(B) Two types of batteries are tested for length of life and the following results are obtained (07)

Battery	Sample size	Mean (in hours)	variance
A	10	500	100
B	12	560	121

Test the hypothesis that battery B has more average life than that of A.

OR

Que.5 (A) Explain F-test. (07)

(B) The following are samples drawn from two normal populations. Test hypothesis that population variances are equal. (07)

Sample I :	20	16	26	27	23	22	-
Sample II :	27	33	42	35	32	34	38

****