2104N258

Candidate's Seat No : _____

IMBA Semester-4 Examination

CSM_BBA_CC_207

Found. of Stat (FoS)-II

April-2023

Time : 2-30 Hours] [Max. Marks : 70

Q.1	A	Explain the Terms : a) Sampling Error. b) Sampling Distribution. c) Population. d) Sample.	(7)
	B	Explain the meaning of the Null Hypothesis and Alternative Hypothesis with the perspective examples in detail.	(7)
Q.2	A	Explain the method of the Simple Random with sampling and Simple random without sampling method in detail with the 2 statistical examples.	(7)
	B	A study investigated the perception of corporate ethical values among individuals specializing in Finance. Using α=0.05 and the following data (Higher scores indicate higher ethical values) test for significance differences in perception among 3 Groups.	(7)

Sr.No.	Marketing Manager	Marketing Research	Advertising
1	6	5	6
2	5	5	7
3	4	4	6
4	5	4	5
5	6	5	6
6	4	4	6

Or

Q.2	A	To study the performance of 3 Surf Excel and 3 different water tempretures,the following 'witness' readings were obtained with specially designed equipment:	(7)

Water Temperature	Detergent A	Detergent B	Detergent C
Cold Water	57	55	67
Warm Water	49	52	68
Hot Water	54	46	58

Perform a Two-Way Analysis of Variance, using 5 Percent level of significance. Elaborate with the coded data and terms in detail.

P.T.O

	B	The Marketing Manager wishes to see if there have been any changes in the ability of trainees after a specific training programme. The Trainees take an aptitude test before the start of the programme and equivalent one after they have completed it. The scores recorded are given below.	(7)

Trainee	Scored Before Training	Scores After Training
A	75	70
B	70	77
C	46	57
D	68	60
E	68	79
F	43	64
G	55	55
H	68	77
I	77	76

Has any change taken place at 5 per cent significance level?

Q.3	A	12 students were given intensive coaching and 5 tests were conducted in a month. The socres of tests 1 and 5 are given below.	(7)

No. of Students	Marks in 1st Test	Marks in 5th Test
1	50	62
2	42	40
3	51	61
4	26	35
5	35	30
6	42	52
7	60	68
8	41	51
9	70	84
10	55	63
11	62	72
12	38	50

Do the data indicate any improvement in the scores obtained in Tests 1 and Tests 5?

	B	There are 3 main brands of a certain powder. A sample of 120 packets sold is examined and found to be allocated among four groups A,B,C and D and Brands I,II and III as shown below.	(7)

Brand				
	A	B	C	D
I	0	4	8	15
II	5	8	13	6
III	18	19	11	13

Are there any Significant differences in the Brand Preferences?

Or

Q.3	A	Explain the difference between the Population Mean and Sample Mean In detail.	(7)

	B	In a test given to two groups of students, the marks obtained are as follows : First Group: 18, 20, 36, 50, 49, 36, 34, 49, 41 Second Group: 29, 28, 26, 35, 30, 44, 46, ----, ----- Examine the significance of the difference between the Arithmetic mean of the marks secured by the students of the above two Group. Justify your answer with the proper conclusions.	(7)
Q.4	A	Find a probability of acceptance a lot when fraction defective of the lot is 0.015 using a single sampling plan (1000, 200, 1) for using Poisson distribution method in detail.	(7)
	B	For a single sampling plan (100, 10, 1). AQL =p1'=0.02, and producer's risk using the Hyper Geometric Distribution in detail.	(7)
		Or	
Q.4	A	Draw an O.C. Curve for a Single sampling plan (100, 20, 1) using the find probability method when fractions likewise 0.01, 0.02, 0.03, 0.04 respectively.	(7)
	B	For a single sampling plan (1000, 100, 2) AQL=P1'=0.01 and LTPD=p2'=0.06 Find Producer's risk and Consumer's risk in detail. (e^{-1}=0.368, e^{-6}=0.002479).	(7)
Q.5	A	What are the usages of the Statistical Quality Control? Elaborate in detail.	(7)
	B	Draw $\bar{x}$ and R charts for the following data and state following Conclusions: Sample No. / Average $\bar{x}$ / Range R 1 / 12.8 / 2.1 2 / 13.1 / 3.1 3 / 13.5 / 3.9 4 / 12.9 / 2.1 5 / 13.2 / 1.9 6 / 14.1 / 3.0 7 / 12.1 / 2.5 8 / 15.5 / 2.8 9 / 13.9 / 2.5 10 / 14.2 / 2.0 [For N=5,A2=0.577,D3=0,D4=2.115] Indicate the Data and Write down with R chart.	(7)

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