

IMBA in FS (NEP) Sem.-2 Examination

MDC-FS - 124

Research Methodology

May-2025

Time : 2-00 Hours]

[Max. Marks : 50

Instructions:

- **Figures to the right indicate Full Marks.**
- **Do not write anything on the question paper.**
- **Simple calculator is allowed. Do not use a scientific calculator.**

Q.1	How to structure a research proposal? Discuss in detail. OR Explain significance of research in business.	10 10																
Q.2 (A) (B)	What is level of significance? Briefly explain. A sample of heights of 6400 soldiers has a mean of 67.45 inches with a SD of 2.56 inches while a sample of heights of 1600 soldiers has a mean of 68.55 inches with SD of 2.52 inches. Do the data indicate that the significant difference? (at 5% level of significance, table value 1.96) OR	5 5																
(A) (B)	What is critical region? Explain in brief. In a certain city X, 450 persons are regular consumers of tea out of a sample of 1000 persons. In another district Y, 400 persons are regular consumers of tea out of a sample of 800 persons. Do these facts reveal a significant difference between two districts as far as tea drinking habit is concerned? (at 5% level of significance, table value 1.96)	5 5																
Q.3 (A) (B)	Explain any three points of difference between large sample test and small sample test. An automatic machine is set to fill 165 tablets in a bottle. A sample of 10 bottles was examined and the number of tablets in them were 168,164,166,167,168,169,170,170,171,170. Test whether the machine is set properly or not? (at 5% level of significance table value is 2.26) OR	5 5																
(A) (B)	Discuss the uses of Chi Square test. From the following table, determine whether inoculation is effective over the disease.	5 5																
	<table border="1"> <thead> <tr> <th></th> <th>effected</th> <th>Not effected</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Inoculated</td> <td>10</td> <td>32</td> <td>42</td> </tr> <tr> <td>Not inoculated</td> <td>22</td> <td>26</td> <td>48</td> </tr> <tr> <td>Total</td> <td>32</td> <td>58</td> <td>96</td> </tr> </tbody> </table>		effected	Not effected	Total	Inoculated	10	32	42	Not inoculated	22	26	48	Total	32	58	96	
	effected	Not effected	Total															
Inoculated	10	32	42															
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	(at 5% level of significance, table value 3.84)																	
Q.4 (A) (B)	What is analysis of variance? Explain the assumptions of analysis of variance. The following samples are drawn from two normal populations. Test the hypothesis that the population variance are equal.	5 5																
	<table border="1"> <tbody> <tr> <td>Sample A</td> <td>16</td> <td>20</td> <td>28</td> <td>20</td> <td>26</td> <td>-</td> <td>-</td> </tr> <tr> <td>Sample B</td> <td>24</td> <td>30</td> <td>22</td> <td>32</td> <td>28</td> <td>28</td> <td>32</td> </tr> </tbody> </table>	Sample A	16	20	28	20	26	-	-	Sample B	24	30	22	32	28	28	32	
Sample A	16	20	28	20	26	-	-											
Sample B	24	30	22	32	28	28	32											
	(at 5% level of significance, table value is 4.53)																	

(P.T.O)

<p>(A) (B)</p>	<p style="text-align: center;">OR</p> <p>What is F test? Explain with the different formulas. The following yields were obtained by using three fertilizers in different plots.</p> <table border="1" data-bbox="411 315 1225 459"> <thead> <tr> <th>Seeds</th> <th colspan="4">Production</th> </tr> </thead> <tbody> <tr> <td>X1</td> <td>2</td> <td>8</td> <td>6</td> <td>6</td> </tr> <tr> <td>X2</td> <td>12</td> <td>10</td> <td>8</td> <td>4</td> </tr> <tr> <td>X3</td> <td>14</td> <td>6</td> <td>10</td> <td>12</td> </tr> </tbody> </table> <p>Test the hypothesis that there is no significant difference between the fertilizers with one way ANOVA. (at 5% level of significance, table value 4.26)</p>	Seeds	Production				X1	2	8	6	6	X2	12	10	8	4	X3	14	6	10	12	<p>5 5</p>
Seeds	Production																					
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X3	14	6	10	12																		
<p>Q.5 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12.</p>	<p>Answer the following questions in brief (Any Ten)</p> <p>1. Define research. 2. Give any two names of research approaches. 3. Give any two objectives of research. 4. Give any one example of statistical hypothesis. 5. Draw diagram of one tailed test. 6. In which condition, z test is applied? 7. Give any one use of chi square test. 8. Give the formula of comparison of two sample mean under t test. 9. Give the formula of chi square test. 10. Give the formula of F ratio where numerator is greater than denominator. 11. Draw the table of one way ANOVA with imaginary figures. 12. Draw the table of two way ANOVA with imaginary figures.</p>	<p>10</p>																				
