

MSc DEGREE EXAMINATION MAY 2026
(Second Semester)

Branch – **COSTUME DESIGN AND FASHION**

RESEARCH METHODOLOGY & STATISTICS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	In _____ research, the researcher will describe, observe and he will document the things, there is no manipulation. (i) Quantitative research (ii) Basic research (iii) Applied research (iv) Descriptive research	K1	CO1
	2	Newspapers are the sources of _____. (i) Primary data (ii) Secondary data (iii) Qualitative data (iv) Quantitative data	K2	CO1
2	3	The row headings of a table are known as _____. (i) Sub-titles (ii) Stubs (iii) Reference notes (iv) Captions	K1	CO2
	4	Find the mode for the following data 25, 35, 25, 30, 32, 25, 43, 42. (i) 35 (ii) 42 (iii) 25 (iv) 43	K2	CO2
3	5	The limit of the correlation co-efficient is _____. (i) 0 to 1 (ii) -1 to +1 (iii) -1 to 0 (iv) 0 to 2	K1	CO3
	6	If one of the regression co-efficient is negative, the other must be _____. (i) Positive (ii) Negative (iii) Positive or negative (iv) Either positive or negative	K2	CO3
4	7	Small sample test is applicable if _____. (i) $n > 30$ (ii) $n < 30$ (iii) $n = 30$ (iv) $n \geq 30$	K1	CO4
	8	Whether the test is one-sided or two-sided, depends upon the _____. (i) Null hypothesis (ii) Alternative hypothesis (iii) Simple hypothesis (iv) Composite hypothesis	K2	CO4
5	9	In F – test, if $S_1^2 \geq S_2^2$, and $n_1 = 10$ and $n_2 = 12$, then the degrees of freedom is _____. (i) 2.65 (ii) 2.90 (iii) 3.84 (iv) 2.52	K1	CO5
	10	Analysis of variance is a statistical method of comparing the _____ of several populations. (i) Standard deviations (ii) Variances (iii) Means (iv) Proportions	K2	CO5

SECTION - B (35 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks

(5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO					
1	11.a.	Explain the objectives of research.	K2	CO1					
	(OR)								
	11.b.	Explain the random sampling methods and state its merits and demerits.							
2	12.a.	Construct the properties of regression co-efficient.	K3	CO2					
	(OR)								
	12.b.	The following data relate to the age of a group of workers. Apply standard deviation and co-efficient of variation.							
		Age			20-25	25-30	30-35	35-40	40-45
	No of workers	170	110	80	45	40	30	25	

Cont...

3	13.b.	A study compares budget spent on fashion styling (X) and success rating of costume design (Y): <table><tr><td>X</td><td>12</td><td>9</td><td>8</td><td>10</td><td>11</td><td>13</td><td>7</td></tr><tr><td>Y</td><td>14</td><td>8</td><td>6</td><td>9</td><td>11</td><td>12</td><td>3</td></tr></table> Analyze by using the Karl Pearson's co-efficient of correlation.	X	12	9	8	10	11	13	7	Y	14	8	6	9	11	12	3	K4	CO3								
X	12	9	8	10	11	13	7																					
Y	14	8	6	9	11	12	3																					
4	14.a.	Explain the general procedure for the testing of hypothesis for large sample test.	K5	CO4																								
	(OR)																											
	14.b.	In a sample of 500 people from a village in Rajasthan, 280 are found to be rice eaters and the rest are wheat eaters. Can we assume that both the food articles are equally popular.																										
5	15.a.	Two random samples were drawn from two normal populations and their values are: <table><tr><td>A</td><td>66</td><td>67</td><td>75</td><td>76</td><td>82</td><td>84</td><td>88</td><td>90</td><td>92</td><td></td><td></td></tr><tr><td>B</td><td>64</td><td>66</td><td>74</td><td>78</td><td>82</td><td>85</td><td>87</td><td>92</td><td>93</td><td>95</td><td>97</td></tr></table> Test whether the two populations have the same variance at the 5% level of significance. ($F=3.36$) at 5% level for $v_1 = 10$ and $v_2 = 8$).	A	66	67	75	76	82	84	88	90	92			B	64	66	74	78	82	85	87	92	93	95	97	K5	CO5
	A	66	67	75	76	82	84	88	90	92																		
	B	64	66	74	78	82	85	87	92	93	95	97																
(OR)																												
	15.b.	Test the following two samples came from the same population. Use run test. <table><tr><td>Sample I</td><td>25</td><td>23</td><td>21</td><td>19</td><td>17</td><td>15</td><td>13</td><td>11</td><td>7</td></tr><tr><td>Sample II</td><td>10</td><td>12</td><td>18</td><td>20</td><td>22</td><td>24</td><td>26</td><td>28</td><td></td></tr></table>	Sample I	25	23	21	19	17	15	13	11	7	Sample II	10	12	18	20	22	24	26	28							
Sample I	25	23	21	19	17	15	13	11	7																			
Sample II	10	12	18	20	22	24	26	28																				

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks

(3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO																								
1	16	Explain the methods of collecting Primary data.	K2	CO1																								
2	17	The number of garments produced are given below: <table><tr><td>Garments</td><td>50-53</td><td>53-56</td><td>56-59</td><td>59-62</td><td>62-65</td><td>65-68</td><td>68-71</td><td>71-74</td><td>74-77</td></tr><tr><td>Frequency</td><td>3</td><td>8</td><td>14</td><td>30</td><td>36</td><td>28</td><td>16</td><td>10</td><td>5</td></tr></table> Apply Mean, Median and Mode.	Garments	50-53	53-56	56-59	59-62	62-65	65-68	68-71	71-74	74-77	Frequency	3	8	14	30	36	28	16	10	5	K3	CO2				
Garments	50-53	53-56	56-59	59-62	62-65	65-68	68-71	71-74	74-77																			
Frequency	3	8	14	30	36	28	16	10	5																			
3	18	A designer studies the relationship between hours spent designing (X) and number of costumes completed (Y): <table><tr><td>Hours(X)</td><td>10</td><td>12</td><td>13</td><td>12</td><td>16</td><td>15</td></tr><tr><td>Costumes(Y)</td><td>40</td><td>38</td><td>43</td><td>45</td><td>37</td><td>43</td></tr></table> Estimate costumes when X=20 hours.	Hours(X)	10	12	13	12	16	15	Costumes(Y)	40	38	43	45	37	43	K5	CO3										
Hours(X)	10	12	13	12	16	15																						
Costumes(Y)	40	38	43	45	37	43																						
4	19	In a survey of buying habits, 400 women shoppers are chosen at random in super market A located in a certain section of the city. Their average monthly food expenditure is Rs. 250 with a standard deviation of Rs.40. For 400 women shoppers are chosen at random in super market B in another section of the city, the average monthly food expenditure is Rs. 220 with a standard deviation of Rs.55. Test at 5% level of significance whether the average food expenditure of the two populations of shoppers from which the samples were obtained are equal.	K4	CO4																								
5	20	A designer tests Four types of fabrics for durability (measured in number of washes before damage): <table><tr><td>Fabric A</td><td>Fabric B</td><td>Fabric C</td><td>Fabric D</td></tr><tr><td>8</td><td>12</td><td>18</td><td>13</td></tr><tr><td>10</td><td>11</td><td>12</td><td>9</td></tr><tr><td>12</td><td>9</td><td>16</td><td>12</td></tr><tr><td>8</td><td>14</td><td>6</td><td>16</td></tr><tr><td>7</td><td>4</td><td>8</td><td>15</td></tr></table> Use ANOVA to test whether fabric type affects durability.	Fabric A	Fabric B	Fabric C	Fabric D	8	12	18	13	10	11	12	9	12	9	16	12	8	14	6	16	7	4	8	15	K5	CO5
Fabric A	Fabric B	Fabric C	Fabric D																									
8	12	18	13																									
10	11	12	9																									
12	9	16	12																									
8	14	6	16																									
7	4	8	15																									

Z-Z-Z

END