22CDP209N

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2025
(Second Semester)

Branch – **COSTUME DESIGN & FASHION**

RESEARCH METHODOLOGY AND 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	The term used in research study produces a consistent results is _____. a) reliability b) validity c) generalizability d) bias	K1	CO1
	2	_____ is not a component of a research proposal. a) abstract b) introduction c) literature review d) data analysis	K2	CO1
2	3	Extreme values have no effect on _____. a) arithmetic mean b) geometric mean c) harmonic mean d) median	K1	CO2
	4	The range of the sample values 51,55,71,60, 50 is _____. a) 21 b) 57.4 c) 11 d) 121	K2	CO2
3	5	The range of the correlation coefficient values is _____. a) 0 to 1 b) -1 to 1 c) -1 to 0 d) 0 to ∞	K1	CO3
	6	The correlation method used to find relationship between two ranks is _____. a) Pearson's correlation b) intra class correlation c) Spearman's correlation d) partial correlation	K2	CO3
4	7	_____ test is used to check whether the samples come from a particular population . a) one sample t – test b) two sample t – test b) paired t – test d) test for proportion	K1	CO4
	8	The critical value of t _____ as the sample size increases. a) increases b) decreases c) constant d) 1	K2	CO4
5	9	Equality of two population variances can be tested by _____. a) t – test b) χ^2test c) z test d) F – test	K1	CO5
	10	Kruskal – Wallis analysis of data is meant for _____. a) one way classification b)two way classification c) two group test d) test for attributes	K2	CO5

Cont...

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.	What is random sampling methods? Give its importance.	K3	CO1
		(OR)		
	11.b.	Write the important objectives of research.		
2	12.a.	What are the different types of data classification?	K4	CO2
		(OR)		
	12.b.	Write short notes on coefficient of variation.		
3	13.a.	Define Scatter plot and list its uses.	K3	CO3
		(OR)		
	13.b.	Explain Karl Pearson's coefficient of correlation and its properties.		
4	14.a.	Write the steps of conducting two sample t test.	K3	CO4
		(OR)		
	14.b.	What is type I and type II error and give its significance testing of hypothesis.		
5	15.a.	Following information is obtained in a sample survey. Check whether conditions of home and child are independent or not by applying 1% loss.	K4	CO5
		(OR)		
	15.b.	Explain Pearson's test for goodness of fit.		

Conditions of child	Conditions of Home		
	Clean	Dirty	Total
clean	70	50	120
Fairly clean	80	20	100
Dirty	35	45	80
Total	185	115	300

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 various steps involved in scientific research .	K4	CO1
2	17	Calculate standard deviation for the following data: size of item: 3.5 4.5 5.5 6.5 7.5 8.5 9.5 Frequency : 3 7 22 60 85 32 8	K4	CO2
3	18	From the given data obtain the two regression equations: X 6 2 10 4 8 Y 9 11 5 8 7	K5	CO3
4	19	The given data represents the marks of 16 students in two subjects. Test whether there is any significant difference between the subject marks at 5% level of significance (Given $t_{0.05,15}$=2.131).	K5	CO4
5	20	Explain analysis of variance with two explanatory variables .	K4	CO5

Students	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Maths	63	65	56	100	88	83	77	92	90	84	68	74	87	64	71	88
Science	69	65	62	91	78	87	79	88	85	92	69	81	84	75	84	82

Z-Z-Z END