

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2018  
(Second Semester)

Branch - COSTUME DESIGN & FASHION

RESEARCH METHODOLOGY AND STATISTICS

Time : Three Hours

Maximum : 75 Marks

Answer ALL questions

ALL questions carry EQUAL marks (5 x 15 = 75)

- 1 a i) Explain the objectives and motivations in Research.  
ii) What are the criteria and good qualities of good research?  
OR  
b i) What are the steps in developing a sampling methods?  
ii) Explain the Non-random and random sampling methods.
- 2 a Discuss briefly about the classification and tabulation.

OR

b Draw a Histogram and frequency polygon from the given data :

Profits : !	0-50	50-100	100-150	150-200	200-250	"25^300^"
Number of shops :	12	18	27	20	17	6

- 3 a From the following data obtain the two regression equations

Sales :	91	97	108	121	67	124	51	73	111	57
Purchases :	71	75	69	97	70	91	39	61	80	47

OR

- b Two competitors in a beauty contest are ranked by three judges in the following order

1 <sup>st</sup> Judge :	1	-	5	10	3	2	4	9	7	8
2 <sup>nd</sup> Judge :	3	5	8	4	7	10	2	1	6	9
3 <sup>rd</sup> Judge : ~1	6		9	B	1	2	3	10	5	7

Use the Rank Correlation to determine which pair of judges has the nearest approach to common taste in beauty.

- 4 a i) State and prove the Additional Theorem of Probability.  
ii) State and prove the Multiplication of probability theorem.

OR

- b i) Write the general procedure for testing of hypothesis.  
ii) In a sample of 1000 people in Maharashtra, 540 are rice eaters and the rest are wheat eaters. Can we assume that both rice and wheat are equally popular in state at 1% level of significance.
- 5 a i) Write the applications of chi-square test.  
ii) Two sample polls of votes for two candidates A and B for a public office are taken, one from among the residents of rural. The results are given in the adjoining table. Examine whether the nature of the areas is related to voting preference in this election :

	Vote for		
Area	A	B	Total
Rural	620	380	1000
Urban	550	450	1000
Total	1170	830	2000

OR

- b What are the assumptions of sign test? Write the procedure for sign test.