

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086.
(For candidates admitted during the academic year 2011-12 & thereafter)

SUBJECT CODE: 11CM/PC/RM24

M.Com. DEGREE EXAMINATION APRIL 2015
COMMERCE
SECOND SEMESTER

COURSE : CORE
PAPER : RESEARCH METHODOLOGY
TIME : 3 HOURS

MAX. MARKS: 100

SECTION A

ANSWER ALL QUESTIONS:

10 x 2 = 20

1. What are the principles of Experimental Research Designs?
2. List out two merits and two demerits of sampling.
3. Describe briefly with example any two types of measurement scales.
4. What is standard error?
5. Mention any four guidelines for writing a research report.
6. The Standard Deviation of a distribution is Hypothesised to be 50. If an observed sample of 30 yields a sample σ of 57, should we reject the null hypothesis that the true σ is 50? Use the 0.05 level of significance.
7. From a sample of 25 observations, the estimate of the σ of the population was found to be 15.0. From another sample of 14 observations, the estimate was found to be 9.7. Can we accept the hypothesis that the two samples come from populations with equal variances, or must we conclude that the variance of the second population is smaller? Use the 0.01 level of significance.
8. A researcher randomly selects two groups of 100 VIII class pupils each. He shows a movie on inter-group relation to group A and none to group B. Next he gives both groups an attitude measure. The mean score of group A (which saw the movie) is 110 and the mean score of group B (which did not see the movie) is 100. Indicate the limits beyond which sample differences between the means probably will not go if the standard deviation for the two groups are, $\sigma_A = 8$ and $\sigma_B = 9$.
9. Suppose we wish to test whether the population mean is significantly larger or smaller than 10. We take a sample and find $\bar{X} = 8$. Our alternative hypothesis should be $\mu \neq 8$ (T/F)
10. If our null and alternative hypotheses are $H_0: \mu = 80$ and $H_1: \mu < 80$, it is appropriate to use a left – tailed test. (T/F)

SECTION B

ANSWER ANY FIVE QUESTIONS:

5 x 8 = 40

11. What is research design? What are the features of a good research design?
12. Explain the reasons for occurrence of sampling and non-sampling errors.
13. What are the tests of sound measurement?

14. A Research organization surveyed the food buying habits of Housewives in two cities A and B and gave the following results.

City	Average Weekly Expenditure on Food	Standard Deviation of Sample (Rs)	Size of Sample
A	2000	200	300
B	2500	250	300

Test at 5 % level of significance, whether the two average weekly expenditures are in fact equal.

15. Describe the layout of a good research report.

16. The following figures relate to the number of units of an item produced per shift by two workers A and B for a number of days

A	19	22	24	27	24	18	20	19	25	-	-
B	26	37	40	35	30	30	40	26	30	35	45

Can it be inferred that worker A is more stable compared to Worker B? Answer using the F-test at 5 percent level of significance.

17. In a certain hospital, an experiment conducted to test the efficacy of a drug in checking Typhoid gave the following results.

Treatment	Typhoid	No Typhoid	Total
Drug	200	300	500
No Drug	280	20	300
Total	480	320	800

With the help of chi-square test at 5 % level of significance, find out the effectiveness of drug in checking Typhoid. Expected frequencies are 300, 180, 200 and 120.

18. Analyze and interpret the following statistics concerning output of wheat per field obtained as a result of experiment conducted to test four varieties of wheat viz., A,B,C and D under a Latin-square design.

C	B	A	D
25	23	20	20
A	D	C	B
19	19	21	18
B	A	D	C
19	14	17	20
D	C	B	A
17	20	21	15

SECTION C

ANSWER ANY TWO QUESTIONS:

2 x 20 = 40

19. Explain research process in detail.
20. What are the different sampling techniques available while selecting a sample?
21. An I.Q test was administered to 5 persons before and after their training. The results are given below

Candidates

	1	2	3	4	5
I.Q before training	110	120	123	132	125
I.Q after training	120	118	125	136	121

Test whether any change in I.Q has taken place after training at 1 % level of significance.

22. The Amrit Merchandising Company wishes to test whether its three salesmen A, B and C tend to make sales of the same size or whether they differ in their selling ability as measured by the average size of their sales. During the last week there have been 14 sale calls- A made 5 calls, B made 4 calls, C made 5 calls. Following are the weekly sales record of the three salesman:

A (Rs)	B(Rs)	C(Rs)
300	600	700
400	300	300
300	300	400
500	400	600
0	-	500

Perform the analysis and draw your conclusion at 5% level.
