

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 86

(For Candidates admitted during the academic year 2019 – 2020 and thereafter)

SUBJECT CODE: 19EC/PC/RM14

M.A. DEGREE EXAMINATION NOVEMBER 2022

**BRANCH III – ECONOMICS
FIRST SEMESTER**

COURSE : CORE

PAPER : RESEARCH METHODS AND ANALYSIS-I (PRACTICALS)

TIME : 3 HOURS

MAX.MARKS : 40

SECTION – A

I. ANSWER ANY FOUR QUESTIONS.

(4 X 10 = 40)

1. Generate a Pie diagram to represent the following data of investment pattern in the five year plan:

ITEM	INVESTMENT (%)
Agriculture and Community Development	14
Irrigation and Power	16
Industries and Minerals	29
Transport and Communications	17
Social Services	16
Inventories	8
Total	100

2. An experiment was conducted to know the impact of new advertisement campaign on sale of television of a particular brand. The number of television units sold on 12 consecutive working days before and after launching the advertisement campaign in a city was recorded. The data obtained are shown in the table given below:

DAYS	BEFORE ADVERTISEMENT	AFTER ADVERTISEMENT
1.	25	28
2.	36	42
3.	22	38
4.	26	40
5.	18	35
6.	8	12
7.	23	29
8.	31	52
9.	25	26
10.	2	26
11.	20	25
12.	5	7

Test the hypothesis using appropriate test statistic and give your inference.

3. To assess the feasibility of a guaranteed annual wage, the Rand Corporation conducted a study to assess the response of labor supply in terms of average hours of work(Y) based on different independent parameters. The data were drawn from a national sample of 6,000 households with male head earnings less than \$15,000 annually. These data are given in the Table given below:

Sl. No.	Hours (X ₁)	Rate (X ₂)	ERSP (X ₃)	ERNO (X ₄)	NEIN (X ₅)	Assets (X ₆)	Age (X ₇)	DEP (X ₈)	School (X ₉)
1.	2157	2.905	1121	291	380	7250	38.5	2.340	10.5
2.	2174	2.970	1128	301	398	7744	39.3	2.335	10.5
3.	2062	2.350	1214	326	185	3068	40.1	2.851	8.9
4.	2111	2.511	1203	49	117	1632	22.4	1.159	11.5
5.	2134	2.791	1013	594	730	12710	57.7	1.229	8.8
6.	2185	3.040	1135	287	382	7706	38.6	2.602	10.7
7.	2210	3.222	1100	295	474	9338	39.0	2.187	11.2
8.	2105	2.493	1180	310	255	4730	39.9	2.616	9.3
9.	2267	2.838	1298	252	431	8317	38.9	2.024	11.1
10.	2205	2.356	885	264	373	6789	38.8	2.662	9.5

- (i) Apply regression analysis using SPSS to suggest a regression model for estimating the average hours worked during the year based on identified independent parameters.
- (ii) Test the regression coefficients for its significance through t-test by using its significance value (p value) in the output.
4. Using the above example in **Question 9** and the table given above:
- (i) Test the regression model for its significance through the F-value by looking to its significance value (p value) in the output.
- (ii) Use the value of R^2 in the output to know the amount of variance explained in the dependent variable by the identified independent variables together in the model.
5. A human resource department of an organization conducted a study to know the status of occupational stress among their employees in different age categories. A questionnaire was used to assess the stress level of the employees in three different age categories: <40, 40–55, and >55 years. The stress scores so obtained are shown in Table given below:

Group A (<40 years)	Group B (40-55 years)	Group C(>55 years)
54	75	55
48	68	51
47	68	59
54	71	64
56	79	52
62	86	8
56	81	65
45	79	48
51	72	56
54	78	49
48	69	-----
52	-----	-----

Apply one-way analysis of variance to test whether mean stress score of the employees in any two age categories are different. Test your hypothesis at 5% level.

6. In a study, 90 workers were tested for their job satisfaction. Their job satisfaction level was obtained based on the questionnaire, and the respondents were classified into one of the three categories, namely, low, average, and high. The observed frequencies are shown below:

Table: Summary of responses of the workers about their job satisfaction levels:

JOB SATISFACTION LEVEL		
Low	Average	High
40	30	20

Compute Chi-square in testing whether there is any specific trend in their job satisfaction and interpret the results.
