STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 600 086
(For candidates admitted from the academic year 2023 – 2024 & thereafter)

M.A DEGREE EXAMINATION, NOVEMBER 2024
BRANCH III - ECONOMICS
FIRST SEMESTER

COURSE : CORE
PAPER : RESEARCH METHODS AND ANALYSIS – I (PRACTICAL)
SUBJECT CODE: 23EC/PC/RM14
TIME : 1 ½ HOURS MAX. MARKS: 40

Q. No.	SECTION A (2 x 20 = 40) Answer any TWO out of FOUR datasets.	CO	KL

STUDENT ID	STUDY HOURS PER WEEK	ATTENDNACE PERCENTAGE	FINAL EXAM SCORE
1	15	85	78
2	8	72	62
3	22	95	91
4	12	80	75
5	18	90	85
6	10	75	68
7	20	93	88
8	7	70	58
9	16	87	80
10	13	82	76
11	25	98	95
12	11	78	72
13	19	91	86
14	9	73	65
15	21	94	89
16	14	84	77
17	23	96	93
18	6	71	55
19	17	88	82
20	5	70	50
21	24	97	94
22	10	76	80
23	20	92	87
24	13	83	76
25	16	86	81

DATASET – 1 From the above table. Information pertaining to 25 students, including their study hours per week, attendance percentage and final exam scores are given.			
A	Create a scatter plot to visualize the relationship between study hours per week and final exam score. Calculate the correlation coefficient between hours studied and exam score.	5	5

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B	Using the data, create a simple linear regression model to predict the Final Exam Score based on study hours per week. Interpret the results including the slope, intercept and R-squared value. What conclusions can you draw about the relationship between study hours per week and final exam score?	6	6

MONTH	SALES AMOUNT	ADVERTISING EXPENDITURE	SEASON
1	$8,500	$800	1
2	$7,200	$600	1
3	$9,800	$1,200	1
4	$11,500	$1,500	2
5	$13,200	$1,800	2
6	$14,500	$2,000	2
7	$12,800	$1,700	3
8	$10,500	$1,300	3
9	$9,200	$1,000	3
10	$7,800	$700	4
11	$6,500	$500	4
12	$10,200	$1,400	4
13	$9,000	$900	1
14	$8,300	$750	1
15	$10,800	$1,350	1
16	$12,500	$1,650	2
17	$14,000	$1,900	2
18	$15,000	$2,000	2
19	$13,500	$1,800	3
20	$11,200	$1,450	3
21	$9,800	$1,100	3
22	$8,000	$750	4
23	$7,000	$600	4
24	$11,000	$1,500	4

DATASET 2 – Dataset contains the monthly sales data for a small business over two years			
A	Create a suitable chart to visualize the years sales and Advertising expenditure of the firm. Calculate the year-on-year growth rate	5	5
B	Perform a correlation analysis between sales amount and advertising expenditure. Interpret the results and discuss what they might imply about the effectiveness of marketing efforts.	6	6

EMPLOYEE	EXPERIENCE	EDUCATION	GENDER	SALARY
1	5	BACHELORS	MALE	55000
2	3	MASTERS	FEMALE	52000
3	7	BACHELORS	FEMALE	60000
4	2	PHD	MALE	58000
5	10	MASTERS	MALE	75000
6	4	BACHELORS	FEMALE	50000
7	6	PHD	FEMALE	72000
8	8	MASTERS	MALE	70000
9	1	BACHELORS	MALE	45000
10	9	PHD	FEMALE	80000

DATASET 3			
A	Using the above data, perform a multiple regression analysis to predict the salary based on experience, education and gender. Report the regression equation and the R-squared value.		
B	Interpret the coefficients of your regression model. What do they tell you about the factors influencing salary?		

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