

Semester: June – Sep 2024		
Examination: End Term Examination		
Programme code: 01 Programme: MBA	Class: FY	Semester: I (SVU 2024)
Name of the Constituent College: K. J. Somaiya Institute of Management		Name of the department/Section/Center: Data Science & Technology
Course Code: 317P01C110	Name of the Course: Spreadsheet Modeling	

Max. Marks; 50

Date:12-11-24

Instructions:

1. Answer any 5 Questions.
2. Solve all examples in different worksheets in a single workbook and name it with your class name and your roll number.
3. Keep saving your working file continuously.
4. Upload the correct file on the server.

Question No.		Max. Marks
Q1 (a)	In the file SSQNT.xlsx, worksheet Q1A contains exam marks for students. Create a column as Grade. The top 10% students receive an A grade, the next 20% students receive a B grade and all other students receive a C grade. Highlight the A grades in red, the B grades in green, and the C grades in yellow.	5
Q1 (b)	In the file SSQNT.xlsx, worksheet Q1B, sort the sales data alphabetically by location, then by product type, then by name and then by date of sale, and finally by units sold.	5
Q2 (a)	In the file SSQNT.xlsx, worksheet Q2A, using VLOOKUP function fill up the Units Sold Table with quantities each Sales person sold.	5
Q2 (b)	In the file SSQNT.xlsx, worksheet Q2B, the worksheet has Newton Manufacturing company's Scientific calculators dispatch data. There are three models N350, N450 and N900, which are dispatched in eight customer zones Brazil, China, France, Malaysia, U.S.Northeast, U.S.Southeast, U.S.Midwest and U.S.West. The worksheet has current quarter shipped volume in thousands for each product at each customer zone. As a Business Analyst you are tasked to inform the Director's the total number of units going to each customer zone and also the total units of each product shipped.	5
Q3 (a)	A firm is doing market research about Volvo Cross Country Wagon sales. They need to determine what factors influence the likelihood that a family will purchase a Station Wagon. In the file SSQNT.xlsx, worksheet Q3A, the data on family size- large or small and the family income high or low with Station wagon ownership is sampled. How can the firm determine how family size and income influence the likelihood that a family will purchase a station wagon.	5
Q3 (b)	The file SSQNT.xlsx, worksheet Q3B contains student's grades on an exam. The table for assigning grades is as follows:	5

Score	Grade
Below 60	F
60-69	D
70-79	C
80-89	B
90 and above	A

Use Excel functions to return each student's letter grade on this exam.

Q4	<p>A US Drug company produces six different products at its plant. For each product they need labour and raw material. In the file SSQNT.xlsx, worksheet Q4, Row 4 shows the hours of labor needed to produce a pound of each product and row 5 shows the pounds of raw material needed to produce a pound of each product. For each drug the price per pound is given in row 6, the unit cost per pound is given in row 7, and the profit contribution per pound is given in row 9. The month's demand for each drug is given in row 8. This month 4500 hours of labor and 1600 pounds of raw material are available. How can this drug company maximize its monthly profit?</p>	10
Q5 a)	<p>The annual demand for a product equal $500 - 3p + 10a^{1/2}$, where p is the price of the product in dollars and a is dollars spent on advertising the product. The annual fixed cost of selling the product is \$10000, and the unit variable cost of producing the product is \$12. Design a two-way table to determine a Price (within \$10) and amount of advertising (within \$100) to illustrate profit at different Selling Price and Advertising Costs.</p>	5
b)	<p>Jagdish can afford a monthly EMI of \$2000 to buy a new car. The annual interest rate that bank charges is 6%, for 15 years. Using Goal Seek function advice how much is the amount that he borrows.</p>	5
Q6 a)	<p>Laxmi Engineering is manufactures auto components for 3 Car companies. The Director wants to understand the sales, revenue, Profit before tax and profits after tax for his company for the next 5 years. He estimates a Year1 sales as 12000 units, Year1SPrice as Rs.7.50 and Year1 cost price as Rs.6. The yearly sales growth is assumed to be 15%, and he estimates yearly Selling Price growth as 8% and due to inflation yearly Cost increment at 5%. If the present tax rate is 20% and he pays annual bank interest as 8% on working capital, design a Spreadsheet model for 5 years to show the input parameters and business output variables. The bar chart shows the variation in Profit After tax and revenue growth for this 5-year period.</p>	5
b)	<p>Eastman Publishing Company is considering publishing an electronic textbook titled "Spreadsheet applications for Business". The fixed cost of manuscript preparation, textbook design, and web site construction is estimated to be \$160,000. Variable processing cost for an initial estimated demand quantity of 3500 is \$6 per book. The Eastman Publishing Company intends selling single user access to the book at \$46.</p> <p>Consider the following scenarios and using scenario manager generate a</p>	5

summary report that gives the profit for each of these scenarios.

	Scenario1	Scenario2	Scenario3	Scenario4	Scenario5
Variable cost/Book	\$6	\$8	\$12	\$10	\$11
Access price	\$46	\$50	\$40	\$50	\$60
Demand	2,500	1,000	6,000	5,000	2,000

Which scenario yields the highest profit?

Which scenario yields the lowest profit?