UNIVERSITY OF PETROLEUM & ENERGY STUDIES
End Semester Examination (Online) – Jan, 2020

Program: MBA- (DB)   **Semester: I**
Subject/Course: Spreadsheet Modeling   **Max. Marks: 100**
Course Code: DSIT 7013   **Duration: 3 Hours**

Section A

1. **Each question will carry 5 marks**
2. **Instruction: Complete the statement / Select the correct answer(s)**
3. **Send the excel sheet in mail ID and snap shot of excel sheet copied in word and converted in pdf to upload in code tantra**

Q.No	Question Content	CO
Q1.	Write all the correct formula to get the value in cell C1 10% lesser than the number in C3 you enter (a) =C3*1.10 (b) =C3*.10 (c) =C3*0.90 (d) =(C3-(C3*0.10))	CO1
Q2.	Given the formula =IF(A1<10, "low", IF(A1<20, "middle", "high")) If the value of A1 is 10, what will the formula return? (a) low (b) medium (c) high (d) none of the above	CO1

Q3.	Cake 2 8 Biscuits 5 7 Bread 3 5 What will the VLOOKUP formula return?		Cake =VLOOKUP(E1,$A$1:$C$3,3,FALSE)		
Q4.	Size 0 5 10 15 Level S M L XL =HLOOKUP(10,$A$1:$E$2,2,FALSE) What will the HLOOKUP formula return?				CO1
Q5.	Which of the following reflects the main strength of a scatter plot and why? a) Scatter plots can be used to visualize any two variable. b) Scatter plots easily show time trend c) Scatter plots help visualize relationship between two variables d) Scatter plots visualize relationship between many variables.				CO1
Q6.	Which of the following is true about Pivot Tables? Select all the correct answers. a) Editing a Pivot Table impact the original data source b) Years, months, days, hours and seconds can group dates in a Pivot Table. c) Pivot Table automatically calculate grand total of rows and columns. d) Multiple columns can filter pivot Table.				CO1

<table>
<tr><td></td><td colspan="2">Section B
1. Each question will carry 10 marks
2. Instruction: Write short / brief notes/solution</td><td></td></tr>
</table>

The formula(logical function in 'Juice&shake Bill) in C2 is intended to return the price from the second worksheet (item pricing), but it has been incorrectly entered.

a) To fix it, what necessary changes is required to replace by?

b) After fixing the formula correctly find the total bill amount in excel/Bill sheet.

Q7. — CO2

	A	B	C	D
1	Item	Quantity	Price Lookup	Total Price
2	Strawberry shake	9	=VLOOKUP(A2,'Sheet 2'!$A$2:$B$6,2,FALSE)	=B2*C2
3	Banana Shake	7		
4	Appricot shake	2		
5	Orange juice	6		
6	Pineapple juice	3		
7	**Total Bill**			=SUM(C2:C6)
8	Note: Quantity is one glass of 100 ml. '9' means--9 glasses=900 ml			

◄ ► ... **Juice&shake Bill**   Item Pricing   ⊕

	A	B	C	D	E	F
1	Item	Price /glass				
2	Strawberry shake	₹45.00				
3	Banana Shake	₹30.00				
4	Appricot shake	₹40.00				
5	Orange juice	₹20.00				
6	Pineapple juice	₹25.00				
7						
8	Note: Quantity is one glass of 100 ml. '9' means--9 glasses=900 ml					

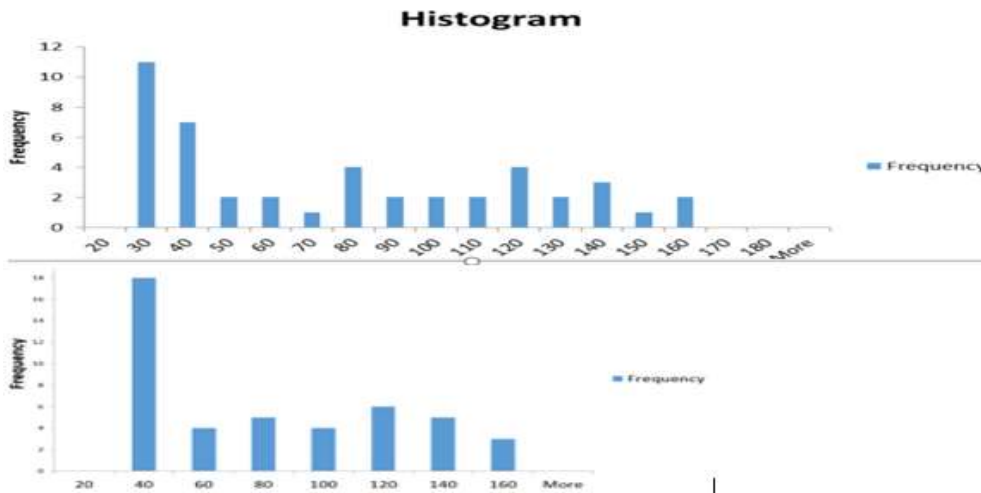◄ ► ... Juice&shake Bill   **Item Pricing**   ⊕

Q8. In Spreadsheet Modeling, Compare and Describe the need of Descriptive, Prescriptive and Predictive models for business decision making. (Illustrate through examples in excel sheet) — CO3

(max 500 words and write in bullet Points / tabulated form)

Q9.	What is done to transform the first histogram into the second histogram (Try in excel sheet) **Histogram** Whether data is multiplied by 2 OR Double the number of data points OR Bin widths doubled (Give explanation in 20 words)	CO2
Q10.	**Product Mix Problem**: An electronic company is producing two component C_1 and C_2 is used in television sets. Each unit of C_1 costs the company Rs. 5 in wages and Rs. 5 in material, while each unit of C_2 costs the company Rs. 25 in wages and Rs. 15 in material. The company sells both products on one-period credit terms, but the company's labor and material expenses must be paid in cash. The selling price of each unit of C_1 is Rs. 30 and selling price of Each unit of C_2 is Rs. 70. Because of the strong monopoly of the company for these components, it is assumed that the company can sell at the prevailing prices as many units as it produces. However, the company's production capacity is limited by two considerations. First, at the beginning of period 1, the company has an initial balance of Rs. 12,000 (cash+bank credits+collection from past credit sales). Second, the company has available in each period 2,000 hours of machine time and 1,400 hours of assembly time. The production of each C_1 requires 3 hours of machine time 2 hours of assembly time, whereas the production of each C_2 requires 2 hours of machine time 3 hours of assembly time. **Formulate** this problem as LP model so as to maximize the total profit to the company.	CO4

Q11.	A major consumer goods manufacturer wishes to decide which of the two new products to bring out on the market and what level of advertising to use. The profit tables for these products are as follows(profits are in units of Rs. 10,000):					CO3

A major consumer goods manufacturer wishes to decide which of the two new products to bring out on the market and what level of advertising to use. The profit tables for these products are as follows(profits are in units of Rs. 10,000):

States of Nature(demand)	Product 1			Product2		
	A1	A2	A3	A1	A2	A3
S1:high	140	160	200	200	210	230
S2: average	100	130	160	160	170	190
S3: low	80	120	140	120	130	140

A1: low expenditure advertising programme
A2: medium expenditure advertising programme
A3: high expenditure advertising programme

Questions:
Find /Analyze the best strategy considering the following uncertain situation

1. The criterion of Pessimism or Maximin

2. The criterion of Optimism or Maximax

3. Minimax Regret Criterion

4. Criterion of Realism (Hurwitz)

		Section C	
	1. **This question will carry 20 (4+4+6+6)marks**		
	2. **Instruction: Long Answer type /Critical Thinking Questions**		
Q12	Using the information/data given below and Using spreadsheet, Develop the model and copy the mathematical annotation/model in the answer script :		CO4

Using the information/data given below and Using spreadsheet, Develop the model and copy the mathematical annotation/model in the answer script :

a) Total Variable Cost
b) Total Profit considering the defective pieces
c) Simulation of profit on various quantity
d) Simulation of Profit on various quantity as well as different labour cost

	Track Suit
Nike Company	Manufacturing
	Track suits for
Product To be Made	sportsperson
Fixed Cost –FC to stablish warehouse	₹ 1,565,500.00
Material Cost per unit --MC	₹ 300.00
Assigned Indirect Cost per unit--IC	₹ 120
Labour Cost per unit--LC	₹ 150
Revenue per unit ---R	₹ 1,475.00
% of defective pieces made but can't be sold --D	4.00%
Goal	Calculate Total Profit
Unit Produced(q)	2000

CO4