

Name:

Enrolment No:



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**Online End term Examination, Jan 2021**

**Course: Spreadsheet Modelling**

**Programme: MBA(Core)**

**Max. Marks: 100**

**Semester: I**

**Time: 03 hrs**

**Course Code: DSBA7001**

**SECTION A**

**Each Question will carry 5 Marks**

S. No.		Marks	CO
	Select the most appropriate	(5x6)	
Q 1.	The formula to add the number in cell A3 with the number in cell A4 is a. sum (A3 + A4) b. sum (A3:A4) c. sum (A3; A4) d. =avg (A3: A4)		CO1
Q 2.	When a new Spreadsheet is opened, at the top of window you've a ..... a. Menu bar b. Object bar c. Formula bar d. Function bar		CO1
Q 3.	A continuous group of cells in a worksheet is called as ..... a. Grid b. Range c. Function d. Address		CO1
Q 4.	The function used to find the square root of a number is..... a. SQT b. SQR c. SQRT d. SRQT		CO1

Q 5.	An empty row can be inserted in a worksheet using .... a. Insert cells down icon b. Insert columns c. Insert rows d. Insert cells right icon		<b>CO1</b>
Q 6.	The power of the spread sheet lies in the fact that the cells can contain _____. a. Formulea b.Data c. Numbers d. Strings		<b>CO1</b>

**SECTION B**

	<b>Each question will carry 10 marks</b>	<b>(10x5)</b>	
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Q 7.	<p>A trading company of Delhi is considering expansion of its activities &amp; planning to open a marketing office at Kolkata to boost the sales in West Bengal region. It is to be decided whether to operate from the existing office at Delhi &amp; cover the area by frequent travelling or else establishing the office at Kolkata. The connected pay-offs &amp; probabilities of two alternatives are as under:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Alternative s</th> <th>States of Nature</th> <th>Probability</th> <th>Pay-off(Rs Lakhs)</th> </tr> </thead> <tbody> <tr> <td rowspan="2">A. Operate from Delhi</td> <td>(i)Increase in demand by 30%</td> <td style="text-align: center;">0.7</td> <td style="text-align: center;">20</td> </tr> <tr> <td>(ii)No appreciable change</td> <td style="text-align: center;">0.3</td> <td style="text-align: center;">15</td> </tr> <tr> <td rowspan="2">B. Open office at Kolkata</td> <td>(i)Increase in demand by 30%</td> <td style="text-align: center;">0.6</td> <td style="text-align: center;">30</td> </tr> <tr> <td>(ii)No appreciable change</td> <td style="text-align: center;">0.4</td> <td style="text-align: center;">-7</td> </tr> </tbody> </table>	Alternative s	States of Nature	Probability	Pay-off(Rs Lakhs)	A. Operate from Delhi	(i)Increase in demand by 30%	0.7	20	(ii)No appreciable change	0.3	15	B. Open office at Kolkata	(i)Increase in demand by 30%	0.6	30	(ii)No appreciable change	0.4	-7		<b>CO2</b>
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<p>Q 8.</p>	<p>Prepare a grade card based on marks obtained by students. The maximum marks in each subject is 100:</p> <table border="1" data-bbox="201 302 1281 695"> <thead> <tr> <th>Name</th> <th>QM</th> <th>Marketing</th> <th>HR</th> </tr> </thead> <tbody> <tr> <td>Aman</td> <td>65</td> <td>45</td> <td>39</td> </tr> <tr> <td>Rishi</td> <td>67</td> <td>48</td> <td>49</td> </tr> <tr> <td>Rohit</td> <td>78</td> <td>58</td> <td>47</td> </tr> <tr> <td>Ayush</td> <td>76</td> <td>63</td> <td>72</td> </tr> <tr> <td>Ajay</td> <td>58</td> <td>40</td> <td>56</td> </tr> <tr> <td>Ajit</td> <td>78</td> <td>55</td> <td>63</td> </tr> <tr> <td>Raman</td> <td>82</td> <td>90</td> <td>90</td> </tr> <tr> <td>Sakshi</td> <td>61</td> <td>71</td> <td>58</td> </tr> <tr> <td>Himani</td> <td>48</td> <td>60</td> <td>61</td> </tr> <tr> <td>Saurbh</td> <td>36</td> <td>42</td> <td>23</td> </tr> </tbody> </table>	Name	QM	Marketing	HR	Aman	65	45	39	Rishi	67	48	49	Rohit	78	58	47	Ayush	76	63	72	Ajay	58	40	56	Ajit	78	55	63	Raman	82	90	90	Sakshi	61	71	58	Himani	48	60	61	Saurbh	36	42	23		<p><b>CO2</b></p>
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<p>Q 9.</p>	<p>The following data relate to advertisement expenditure(in lakh of rupees) and their corresponding sales( in crores of rupees).</p> <table border="1" data-bbox="201 842 1291 1066"> <tbody> <tr> <td>Adverti sement Exp(in lakh)</td> <td>40</td> <td>50</td> <td>38</td> <td>60</td> <td>65</td> <td>50</td> <td>35</td> </tr> <tr> <td>Sales(in lakh)</td> <td>38</td> <td>60</td> <td>55</td> <td>70</td> <td>60</td> <td>48</td> <td>30</td> </tr> </tbody> </table> <p>Draw the regression model.</p>	Adverti sement Exp(in lakh)	40	50	38	60	65	50	35	Sales(in lakh)	38	60	55	70	60	48	30		<p><b>CO3</b></p>																												
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<p>Q 10.</p>	<p>. In a certain game, player A has three possible courses of action L, M and N, while B has two possible choices P and Q. Payments to be made according to the choice made.</p> <table border="1" data-bbox="263 1262 613 1598"> <thead> <tr> <th>Choices</th> <th>Payments</th> </tr> </thead> <tbody> <tr> <td>L,P</td> <td>A pays B Rs 3</td> </tr> <tr> <td>L,Q</td> <td>B pays A Rs 3</td> </tr> <tr> <td>M,P</td> <td>A pays B Rs 2</td> </tr> <tr> <td>M,Q</td> <td>B pays A Rs 4</td> </tr> <tr> <td>N,P</td> <td>B pays A Rs 2</td> </tr> <tr> <td>N,Q</td> <td>B pays A Rs 3</td> </tr> </tbody> </table> <p>Find saddle point,best strategy for each player and also value of game.</p>	Choices	Payments	L,P	A pays B Rs 3	L,Q	B pays A Rs 3	M,P	A pays B Rs 2	M,Q	B pays A Rs 4	N,P	B pays A Rs 2	N,Q	B pays A Rs 3		<p><b>CO3</b></p>																														
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Q 11.	<p>A company wants to purchase a machine for which it have two alternatives of two different machines "A" and "B" from the data given below for its selection:            Cost of capital(r) : 12%            Initial cost of equipment "A": Rs.12,000            Initial cost of equipment "B": Rs.20,500</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th rowspan="2">Years</th> <th colspan="2">Cash inflow (CF) after tax</th> </tr> <tr> <th>Machine-A</th> <th>Machine-B</th> </tr> </thead> <tbody> <tr> <td>CF 1</td> <td>3560</td> <td>1870</td> </tr> <tr> <td>CF 2</td> <td>3890</td> <td>2400</td> </tr> <tr> <td>CF 3</td> <td>2465</td> <td>7650</td> </tr> <tr> <td>CF 4</td> <td>4530</td> <td>3540</td> </tr> <tr> <td>CF 5</td> <td>5670</td> <td>8320</td> </tr> <tr> <td>Sum</td> <td>20115</td> <td>23780</td> </tr> </tbody> </table> <p>Which machine should the company purchase on the basis of present value method?</p>	Years	Cash inflow (CF) after tax		Machine-A	Machine-B	CF 1	3560	1870	CF 2	3890	2400	CF 3	2465	7650	CF 4	4530	3540	CF 5	5670	8320	Sum	20115	23780		<b>CO3</b>
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**SECTION-C**

<b>Each Question carries 20 Marks</b>	<b>(20x1)</b>
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Q 12.	<p>A firm produces three products. These products are processed on three different machines. The time required to manufacture one unit of each of the three products and the daily capacity of the three machines are given in the table below:</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th rowspan="2">Machine</th> <th colspan="3">Time per unit (Minutes)</th> <th rowspan="2">Machine Capacity (minutes/day)</th> </tr> <tr> <th>Product 1</th> <th>Product 2</th> <th>Product 3</th> </tr> </thead> <tbody> <tr> <td>M<sub>1</sub></td> <td>2</td> <td>3</td> <td>2</td> <td>440</td> </tr> <tr> <td>M<sub>2</sub></td> <td>4</td> <td>-</td> <td>3</td> <td>470</td> </tr> <tr> <td>M<sub>3</sub></td> <td>2</td> <td>5</td> <td>-</td> <td>430</td> </tr> </tbody> </table> <p>It is required to determine the daily number of units to be manufactured for each product. The profit per unit for product 1, 2 and 3 is Rs. 4, Rs.3 and Rs.6 respectively. It is assumed that all the amounts produced are consumed in the market. Formulate the mathematical (L.P.) model that will maximise the daily profit. Find product quantity for each product and overall profit using solver.</p>	Machine	Time per unit (Minutes)			Machine Capacity (minutes/day)	Product 1	Product 2	Product 3	M <sub>1</sub>	2	3	2	440	M <sub>2</sub>	4	-	3	470	M <sub>3</sub>	2	5	-	430		<b>CO4</b>
Machine	Time per unit (Minutes)			Machine Capacity (minutes/day)																						
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