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|---|---|
| **Name:**<br>**Enrolment No:** | UPES |

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**End Term Examination, December 2021**

**Course: Spreadsheet Modelling** **Semester: I**
**Programme: MBA(DB)** **Time: 03 hrs**
**Max. Marks: 100** **Course Code: DSIT 7015**

**SECTION A**

**Each Question will carry 2 Marks**

| S. No. | | Marks | CO |
|---|---|---|---|
| Q 1. | Select the most appropriate | (2x10) | |
| | 1. The formula to add the number in cell A3 with the number in cell A4 is<br>a. sum (A3 + A4)<br>b. sum (A3:A4)<br>c. sum (A3; A4)<br>d. =avg (A3: A4) | | CO1 |
| | 2. When a new Spreadsheet is opened, at the top of window you've a .....<br>a. Menu bar<br>b. Object bar<br>c. Formula bar<br>d. Function bar | | CO1 |
| | 3. A continuous group of cells in a worksheet is called as .....<br>a. Grid<br>b. Range<br>c. Function<br>d. Address | | CO1 |
| | 4. The function used to find the square root of a number is…….<br>a. SQT<br>b. SQR<br>c. SQRT<br>d. SRQT | | CO1 |

| | | | |
|---|---|---|---|
| | 5. An empty row can be inserted in a worksheet using ....<br>a. Insert cells down icon<br>b. Insert columns<br>c. Insert rows<br>d. Insert cells right icon | | **CO1** |
| | 6. The power of the spread sheet lies in the fact that the cells can contain _____<br>a. Formulea<br>b.Data<br>c. Numbers<br>d. Strings | | **CO1** |
| | 7. Which bars have shortcut icons for frequently done tasks in the Spreadsheet<br>a. Function bar<br>b. Object bar<br>c. Formula bar<br>d.Function bar and Object bar | | **CO1** |
| | 8. The syntax of formula begins with .....<br>a. +<br>b. -<br>c. ^<br>d. = | | **CO1** |
| | 9. A cell address can be made absolute by using the .....sign?<br>a. #<br>b. $<br>c. ^<br>d. £ | | **CO1** |
| | 10. Which operation is to be performed to select a group of cells?<br>a. Click on the first cell<br>b. Clickon the last cell<br>c. Click on the first & last cell<br>d.Click on the first cell & drag till the last cell | | **CO1** |
| | **SECTION B** | | |
| | **Each question will carry 5 marks** | **(5x4)** | |
| Q 2. | How would you define the words description, prediction, and prescription? Carefully consider what is unique about the meaning of each word. | | **CO2** |
| Q 3. | In what ways do spreadsheet models facilitate the decision-making process? | | **CO2** |

<table>
<tr><td>Q 4.</td><td>What are the benefits of using a modeling approach to decision making?</td><td></td><td>CO2</td></tr>
<tr><td>Q 5.</td><td>What is “What If Analysis”? How scenaerio manager is different from goal seek. Explain with example.</td><td></td><td>CO2</td></tr>
<tr><td></td><td>SECTION-C</td><td></td><td></td></tr>
<tr><td></td><td>Each Question carries 10 Marks</td><td>10x3</td><td></td></tr>
<tr><td>Q 6.</td><td>. 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.
<table>
<tr><td>Choices</td><td>Payments</td></tr>
<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>
</table>
Find saddle point,best strategy for each player and also value of game.</td><td></td><td>CO3</td></tr>
<tr><td>Q 7.</td><td>A company XYZ Pvt Ltd. have four alternatives to purchase reactors, but due to financial reasons they can only purchase one reactors. All cash inflows after taxes (CF) and initial cost are given below in table and they are unequally spread throughout year, all reactors have same life span of 7 years. If company wants to recover all its investment within 4 years, then determine which alternative they should choose to purchase the reactors on the basis of payback period?</td><td></td><td>CO3</td></tr>
</table>

| Alternatives → / Cash Flow (CF) ↓ | A | B | C | D |
|---|---|---|---|---|
| Initial cost | Rs.70,000 | Rs.12,40,000 | Rs.1,80,000 | Rs.5,40,000 |
| CF Year 1 | Rs.24,000 | Rs.47,200 | Rs.20,000 | Rs.2,04,000 |
| CF Year 2 | Rs.24,000 | Rs.1,80,000 | Rs.17,000 | Rs.1,57,000 |
| CF Year 3 | Rs.24,000 | Rs.73,500 | Rs.38,000 | Rs.2,50,000 |
| CF Year 4 | Rs.24,000 | Rs.26,700 | Rs.76,000 | Rs.75,000 |
| CF Year 5 | Rs.24,000 | Rs.2,00,000 | Rs.27,000 | Rs.25,000 |
| CF Year 6 | Rs.24,000 | Rs.4,50,000 | Rs.13,000 | Rs.16,000 |
| CF Year 7 | Rs.24,000 | Rs.73,000 | Rs.2,20,000 | Rs.0 |

Q 8.

A company is evaluating four alternative single-period investment opportunities whose returns are based on the state of the economy. The possible states of the economy & the associated probability distribution is as follows:

State : Fair Good Great
Probability : 0.2 0.5 0.3

The returns for each investment opportunity & each state of the economy are as follows:

| **Alternative** | **State of Economy** | | |
|---|---|---|---|
| | Fair(Rs) | Good(Rs) | Great(Rs) |
| W | 1000 | 3000 | 6000 |
| X | 500 | 4500 | 6800 |
| Y | 0 | 5000 | 8000 |
| Z | -4000 | 6000 | 8500 |

Determine the expected return for each alternative. Which alternative investment proposal would you recommend if the expected monetary value is to be employed?

**CO3**

## SECTION-D

| | **Each Question carries 15 Marks** | **(15x2)** | |
|---|---|---|---|
| Q 9. | A firm manufactures two products, each of which must be processed through two departments 1 and 2. The hourly requirements per unit for each product in each department, the weekly capacities in each department, selling price per unit, labor cost per unit, and raw material cost per unit are summarized as follows:<br><br>Product A / Product B / Weekly capacity<br>Department 1: 3 / 2 / 120<br>Department 2: 4 / 6 / 260<br>Selling price per unit: Rs 25 / Rs 30<br>Labor cost per unit: Rs 16 / Rs 20<br>Raw material cost per unit: Rs 4 / Rs 4<br><br>The problem is to determine the number to be produced of each so as to maximize total contribution to profit.<br><br>a) Identify the important decision variables<br>b) Construct objective function in this case<br>c) Constructs the constraints involved in this case<br>d) Determine the number to be produced by each for maximum profit<br>e) Calculate maximum profit | | **CO4** |
| Q 10. | (i) You're enrolled in a class. You currently have a grade of 65, and you need at least a 70 to pass the class. You have one final assignment that might be able to raise your average. The grades on the first four assignments are 58, 70, 72, and 60.Find out what grade you need on the final assignment to pass the class.<br><br>(ii) You are a Production Manager of a company. The below table shows the list of expenses and profits.<br><br>Price: Rs 12 per Qty<br>Quantity: 102 units<br>Total Revenue: Price X Qty<br>Handling cost(HC): @ Rs 3.5 per Qty<br>Production cost(PC): @ Rs 5 per Qty<br>Total cost: Sum of HC plus PC<br>Profit/Loss: Total Revenue-Total cost<br><br>You used Scenario manager to determine the profit/loss when Qty is 55 units, 120 units, 65 units, and 164 units, respectively. | | **CO4** |