

**VIT**

Vellore Institute of Technology

(Approved by the University Grants Commission, New Delhi)

Continuous Assessment Test – I

Programme Name & Branch: B.Tech & All Branches

Course Name & Code: Industrial Engineering and
Management (MEE1014)

FALL SEMESTER-2019-20

Class Number: VL2019201007355 Slot: G2+TG2
VL2019201006801Exam Duration: 90Minutes
Maximum Marks: 50

Answer All Questions

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S.No.	Question										Marks																																	
1. A)	Katherine advertises to sell cookies for Rs40 a dozen. She sells 50 dozen, and decides that she can charge more. She raises the price to Rs 60 a dozen and sells 40 dozen. What is the elasticity of demand? Assuming that the elasticity of demand is constant, how many would she sell if the price were Rs 100 a box?										5																																	
B)	<p>The table below shows the temperature (degrees C), at midnight, over the last ten days:</p> <table border="1"> <thead> <tr> <th>Day</th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> <th>7</th> <th>8</th> <th>9</th> <th>10</th> </tr> </thead> <tbody> <tr> <td>Temp</td> <td>1.5</td> <td>2.3</td> <td>3.7</td> <td>3.0</td> <td>1.4</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>1.3</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1.3</td> <td>2.4</td> <td>3.7</td> <td>0.5</td> <td></td> </tr> </tbody> </table> <ul style="list-style-type: none"> Calculate a Four day moving average for each day from 5 to 11. What would be your forecast for the temperature at midnight on day 11? Apply exponential smoothing with a smoothing constant of 0.3 to derive a forecast for the temperature at midnight on day 11. Assume initial forecast as 1.7. Which of the two forecasts for the temperature at 11 p.m. on day 11 do you prefer and why? 										Day	1	2	3	4	5	6	7	8	9	10	Temp	1.5	2.3	3.7	3.0	1.4	-	-	-	-	1.3							1.3	2.4	3.7	0.5		15
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2. A)	<p>Farewell Corporation manufactures Integrated Circuit boards (I.C board) for electronics devices. The planning department knows that the sales of their client goods depend on how much they spend on advertising, on account of which they receive in advance of expenditure.</p> <p>The money spend by the client on advertising and sales (in thousands of Rupees) is given for different periods in following table :</p> <p>The planning department wishes to find out the relationship between their clients advertising and sales, so as to find demand for I.C board by using Regression analysis</p>										10																																	



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Period	1	2	3	4	5	6	7	8	9	10
Advertising in lakhs of rupees	20	25	15	18	22	25	27	23	16	20
Sales in lakhs of rupees	6	8	7	7	8	9	10	7	6	8

B) Explain the determinants of demand for a product.

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3. A)

A manufacturer has shown the following expenses for manufacturing of a product per year. Determine the unit selling price if 25% profit is required by the company. The company plans to manufacture 12000 units in this year. Find also the prime cost, factory cost, cost of production, and total cost. (All the values are in Indian rupees)

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- Opening stock of raw materials - 67,000
- Closing stock of raw materials - 12,500
- Opening stock of work in progress - 80,000
- Closing stock of work in progress - 35,000
- Opening stock of finished goods - 2,00,000
- Closing stock of finished goods - 47,500
- Raw material purchased - 3,00,000
- Wages paid to the machinists - 1,50,000
- Depreciation on the plant and machinery - 27,000
- Lighting of office - 700
- Director's remuneration - 1,40,000
- Traveling expenses - 7,600
- Rent, rates and insurance of warehouse - 3,100
- Rent, rates and insurance of office - 2,300
- Lighting of warehouse - 2,700
- Printing and stationery - 1,500
- Trade magazines - 700
- Telephone charge - 25,000
- Salary paid to the office staff - 2,50,000
- Salesmen commission - 25,000
- Advertisement expenses - 70,000
- Maintenance expenses (for machines in the factory) = 25,000

B) What is the Delphi method? Describe its main advantages and limitations.

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