

Doon University
Internal Examinations, 2015-16

30-3-2016

Name of the Programme: I MBA
Subject: Quantitative Techniques
Full Marks: 30

Semester: 4th
Subject Code: I MBA 401
Time: 2 Hours

<i>Instructions: Answer all Questions.</i>		Marks																														
1.	What is a balanced transportation problem?	2																														
2.	What is meant by "rim condition"?	2																														
3.	What are the methods of finding Initial Feasible Solution to a transportation problem?	2																														
4.	<p>A company has four plants at USA, UK, France and Germany manufacturing 200 units each. The company has to transport 150 units of products to each of the three destinations: Iran, Iraq, and Syria. The unit cost of transporting products from each manufacturing center to each destination center is given below: Find the optimal transportation route.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th></th> <th>IRAN</th> <th>IRAQ</th> <th>SYRIA</th> <th>SUPPLY</th> </tr> </thead> <tbody> <tr> <td>USA</td> <td style="text-align: center;">8</td> <td style="text-align: center;">6</td> <td style="text-align: center;">5</td> <td style="text-align: center;">150</td> </tr> <tr> <td>UK</td> <td style="text-align: center;">6</td> <td style="text-align: center;">6</td> <td style="text-align: center;">6</td> <td style="text-align: center;">150</td> </tr> <tr> <td>FRANCE</td> <td style="text-align: center;">10</td> <td style="text-align: center;">8</td> <td style="text-align: center;">4</td> <td style="text-align: center;">150</td> </tr> <tr> <td>GERMANY</td> <td style="text-align: center;">8</td> <td style="text-align: center;">6</td> <td style="text-align: center;">4</td> <td style="text-align: center;">150</td> </tr> <tr> <td>DEMAND</td> <td style="text-align: center;">200</td> <td style="text-align: center;">200</td> <td style="text-align: center;">200</td> <td style="text-align: center;">600</td> </tr> </tbody> </table>		IRAN	IRAQ	SYRIA	SUPPLY	USA	8	6	5	150	UK	6	6	6	150	FRANCE	10	8	4	150	GERMANY	8	6	4	150	DEMAND	200	200	200	600	12
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5.	<p>Solve the following LP problem: Max $z = 800x_1 + 600x_2 + 300x_3$ Subject to: $10x_1 + 4x_2 + 5x_3 \leq 2000$ $2x_1 + 5x_2 + 4x_3 \leq 1000$ $x_1, x_2, x_3 \geq 0$</p>	12																														