

Trình độ: ĐẠI HỌC; Ngày thi: 02/01/2020

Môn: TỐI ƯU HÓA & QHTT

ĐÁP ÁN ĐỀ THI CHÍNH THỨC

(Đáp án - thang điểm gồm 2/2 trang)

Câu	Nội dung	Điểm																																																						
1		5,0																																																						
	<p>Ma trận hệ số ràng buộc</p> $A = \begin{pmatrix} 1 & 0 & 7 & -3 & 0 \\ 0 & 1 & -2 & 1 & 0 \\ 0 & 0 & 3 & -1 & 1 \end{pmatrix}$ <p>Bài toán đã có dạng chuẩn tắc Giải bài toán bằng phương pháp đơn hình.</p>	1,0																																																						
	<table border="1"> <thead> <tr> <th></th> <th></th> <th></th> <th><math>x_1</math></th> <th><math>x_2</math></th> <th><math>x_3</math></th> <th><math>x_4</math></th> <th><math>x_5</math></th> <th><math>\lambda_i</math></th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td>3</td> <td>2</td> <td>5</td> <td>-2</td> <td>0</td> <td></td> </tr> <tr> <td>3</td> <td><math>x_1</math></td> <td>7</td> <td>1</td> <td>0</td> <td>(7)</td> <td>-3</td> <td>0</td> <td>1*</td> </tr> <tr> <td>2</td> <td><math>x_2</math></td> <td>1</td> <td>0</td> <td>1</td> <td>-2</td> <td>1</td> <td>0</td> <td></td> </tr> <tr> <td>0</td> <td><math>x_5</math></td> <td>16</td> <td>0</td> <td>0</td> <td>3</td> <td>-1</td> <td>1</td> <td>16/3</td> </tr> <tr> <td></td> <td></td> <td>23</td> <td>0</td> <td>0</td> <td>17*</td> <td>-5</td> <td>0</td> <td></td> </tr> </tbody> </table>				$x_1$	$x_2$	$x_3$	$x_4$	$x_5$	$\lambda_i$				3	2	5	-2	0		3	$x_1$	7	1	0	(7)	-3	0	1*	2	$x_2$	1	0	1	-2	1	0		0	$x_5$	16	0	0	3	-1	1	16/3			23	0	0	17*	-5	0		1,0
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0	$x_5$	-3	-1	2	0	0	1																																																	
		8	-74/7	-1	0	0	0																																																	
	Vậy phương án tối ưu là $x = (0, 0, 10, 24, -3)$ và $f_{\min} = 8$	1,0																																																						

<b>2</b>		<b>5,0</b>																																				
<p>Gọi <math>x_{ij}</math> là lượng hàng chuyển từ cửa hàng phân phối <math>CH_i</math> đến công trường <math>CT_j, x_{ij} \geq 0</math>.</p>																																						
	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>CT<sub>1</sub> 30T</th> <th>CT<sub>2</sub> 35T</th> <th>CT<sub>3</sub> 25T</th> <th>CT<sub>4</sub> 10T</th> <th></th> </tr> </thead> <tbody> <tr> <td>CH<sub>1</sub> 15T</td> <td>1 15</td> <td>11 0</td> <td>2 0</td> <td>12 0</td> <td><math>r_1 = 0</math></td> </tr> <tr> <td>CH<sub>2</sub> 35T</td> <td>6 0</td> <td>8 10</td> <td>1 25</td> <td>10 0</td> <td><math>r_2 = -1</math></td> </tr> <tr> <td>CH<sub>3</sub> 10T</td> <td>3 0</td> <td>2 10</td> <td>6 0</td> <td>5 0</td> <td><math>r_3 = 5</math></td> </tr> <tr> <td>CH<sub>4</sub> 40T</td> <td>3 15</td> <td>9 15</td> <td>4 0</td> <td>9 10</td> <td><math>r_3 = -2</math></td> </tr> <tr> <td></td> <td><math>s_1 = -1</math></td> <td><math>s_2 = -7</math></td> <td><math>s_3 = 0</math></td> <td><math>s_4 = -7</math></td> <td></td> </tr> </tbody> </table>		CT <sub>1</sub> 30T	CT <sub>2</sub> 35T	CT <sub>3</sub> 25T	CT <sub>4</sub> 10T		CH <sub>1</sub> 15T	1 15	11 0	2 0	12 0	$r_1 = 0$	CH <sub>2</sub> 35T	6 0	8 10	1 25	10 0	$r_2 = -1$	CH <sub>3</sub> 10T	3 0	2 10	6 0	5 0	$r_3 = 5$	CH <sub>4</sub> 40T	3 15	9 15	4 0	9 10	$r_3 = -2$		$s_1 = -1$	$s_2 = -7$	$s_3 = 0$	$s_4 = -7$		2,0
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<p>Kiểm tra tính tối ưu:</p>																																						
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<p>Ta có cước phí mới các ô không âm nên phương án cuối cùng là tối ưu.</p>		0,5																																				
<p>Kết quả của bài toán: <math>X = \begin{pmatrix} 15 &amp; 0 &amp; 0 &amp; 0 \\ 0 &amp; 10 &amp; 25 &amp; 0 \\ 0 &amp; 10 &amp; 0 &amp; 0 \\ 15 &amp; 15 &amp; 0 &amp; 10 \end{pmatrix}</math></p>		0,5																																				
<p>Tổng số <math>T \times km</math> phải thực hiện là ít nhất: <b>310</b></p>		0,5																																				