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NP-Hard

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(SA)

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(SA:2) (SA:1)	%
	(MODM)
(SA:2) (SA:1)	
	(SA:1)
	(MUMC)
(SA:3)	(SA:2)
	(MUMT)

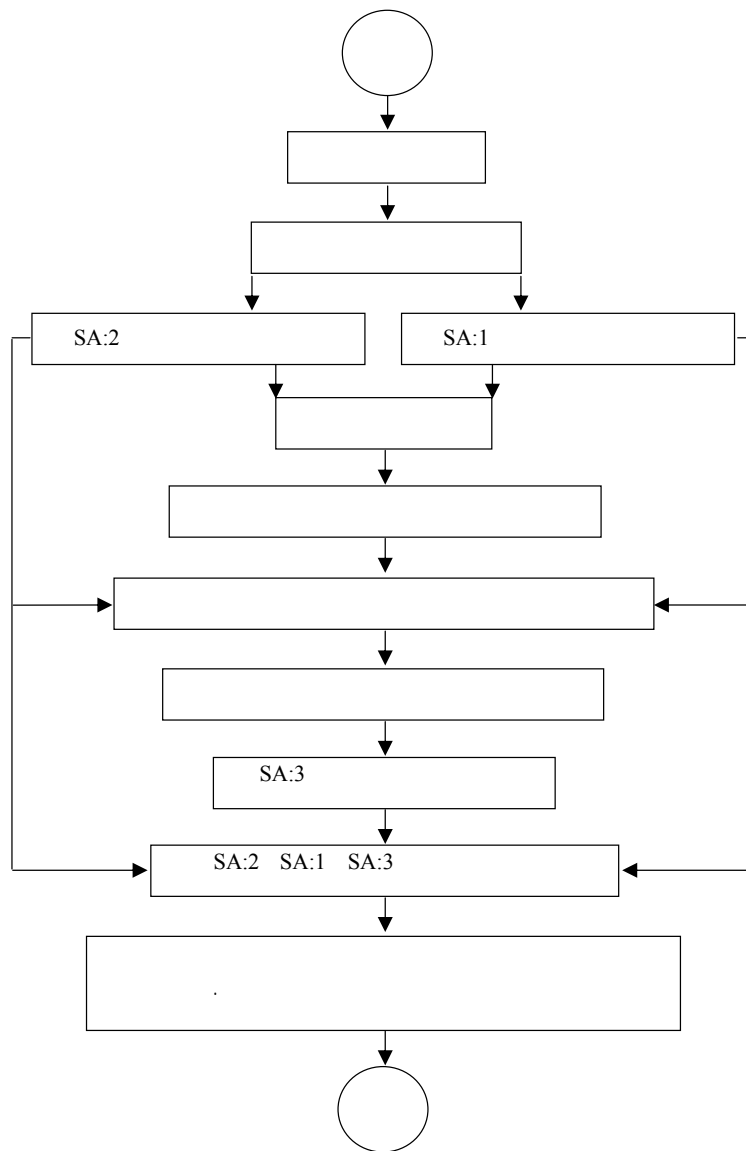
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(SA:3)  
(SA:2) (SA:1)

%

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Gam T<sub>0</sub> T

:Total

:Accept

n

n

):

:Percent

:Count

$$\left( \left[ 0, \frac{1}{n} \right), \left[ \frac{1}{n}, \frac{2}{n} \right), \dots, \left[ \frac{(n-1)}{n}, 1 \right] \right)$$

$$(Accept / Total) * 100 < Percent$$

Count

Count Percent Accept Total

**(SA:1)**

**(SA:1)**

:F(S<sub>C</sub>)

:F(S<sub>1C</sub>)

**(SA:1,2,3)**  
Gam Percent A<sub>5</sub> A<sub>1</sub>

:F(G<sub>C</sub>)

:S

$$: e^{\left( \frac{D_s}{T} \right)}$$

:S<sub>1</sub>

D<sub>S</sub>

:G

(0,1)

:u

$$D_S = F(S_{1C}) - F(S_C)$$

( )

:T

:T<sub>0</sub>

D<sub>G</sub>

:Gam

(SA:2)

$$D_G = F(S_C) - F(G_C) \quad ( )$$

(SA:1)

(SA:2)

- :F(S\_T) T=A\_1, T\_0=A\_2, Total=0, Accept=0, Count=0

F(G\_C) F(S\_C) G S

:F(S\_{IT}) T < T\_0 Count=A\_3

:F(G\_T) S\_1

D\_S F(S\_{IC}) S

:e^{(-\frac{D\_S}{T})} D\_S < 0

D\_S F(S\_C) S F(S\_{IC}) S\_1  
Accept=Accept+1 D\_G

D\_G < 0

D\_S = F(S\_{IT}) - F(S\_T) ( ) Count F(G\_C) G 0 F(S\_{IC}) S\_1

D\_G u < e^{(-\frac{D\_S}{T})}

D\_G = F(S\_T) - F(G\_T) ( ) F(S\_C) S F(S\_{IC}) S\_1  
Accept=Accept+1

(SA:2)

Total=Total+1  
Accept > A\_5 Total > A\_4

T=A\_1, T\_0=A\_2, Total=0, Accept=0, Count=0 (Accept / Total)\*100 < Percent

F(G\_T) F(S\_T) G S

T < T\_0 Count=A\_3 Total=0 Count=Count+1  
T=Gam\*T

Accept=0

D\_S F(S\_{IT}) S ( ) G

$Accept > A_5 \quad Total > A_4$

$D_S < 0$

$(Accept / Total) * 100 < Percent$

$F(S_T) \quad S \quad F(S_{1T}) \quad S_1$

$Accept = Accept + 1 \quad D_G$

$D_G < 0$

$Count = Count + 1$

$Total = 0$

$T = Gam * T$

$Count \quad F(G_T) \quad G \quad 0 \quad F(S_{1T}) \quad S_1$

$Accept = 0$

$( ) \quad G$

$u < e^{-\left(\frac{D_S}{T}\right)}$

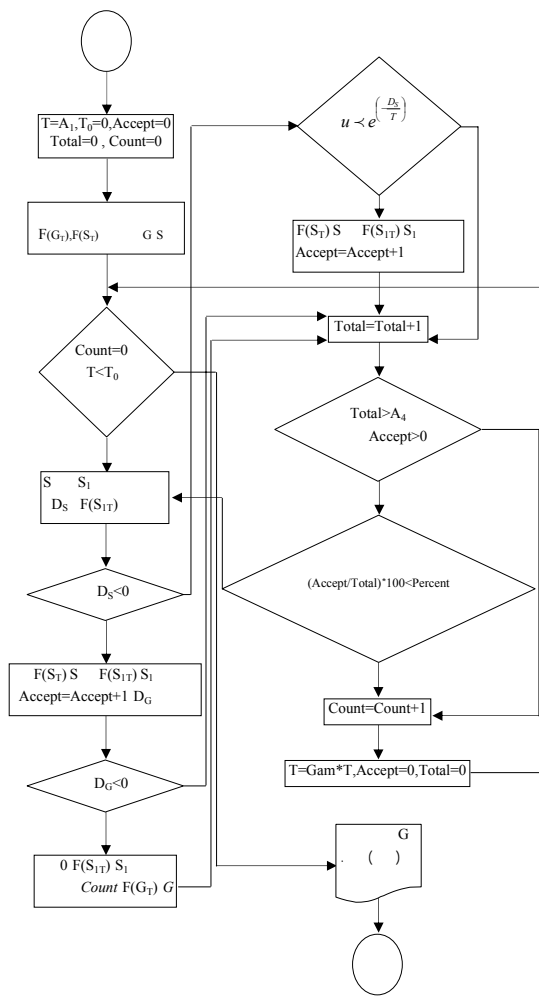
(SA:2) (SA:1)

( ) ( )

$F(S_T) \quad S \quad F(S_{1T}) \quad S_1$

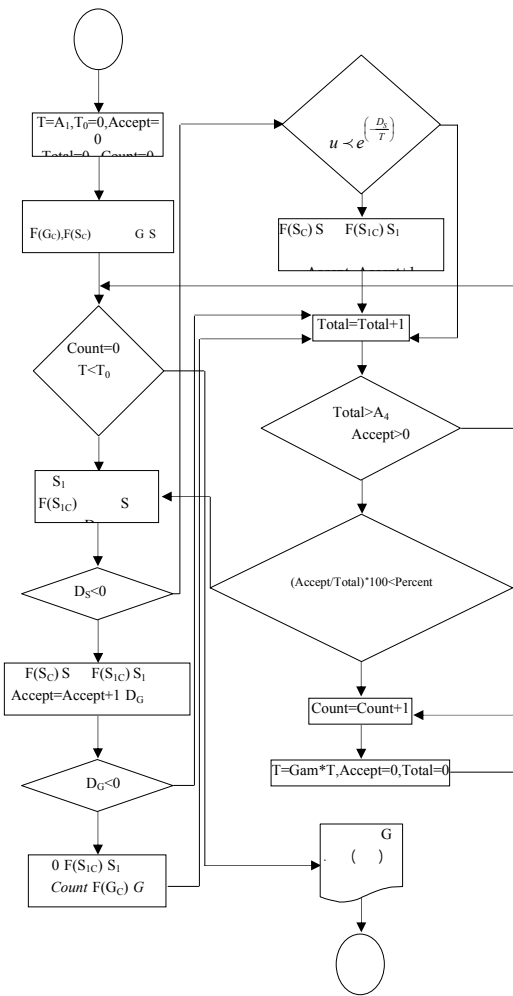
$Accept = Accept + 1$

$Total = Total + 1$



(SA:2)

:



(SA:1)

:

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	$D_{SC}$	<b>(SA:3)</b>
<p>∴</p> <p><math>D_{SC}=F(S_{1C})-F(S_C)</math></p>	<p>( )</p>	
	$D_{G1T}$	
<p>∴</p> <p><math>D_{G1T}=F(S_{1T})-F(G_{1T})</math></p>	<p>( )</p>	<p><b>(SA:3)</b></p> <p>:G</p>
	$D_{G1C}$	:G <sub>1</sub>
<p>∴</p> <p><math>D_{G1C}=F(S_{1C})-F(G_{1C})</math></p>	<p>( )</p>	<p>:F(S<sub>T</sub>), F(S<sub>1T</sub>), F(S<sub>C</sub>), F(S<sub>1C</sub>)</p> <p>(SA:1,2)</p>
	$D_{GT}$	:F(G <sub>C</sub> )
<p>∴</p> <p><math>D_{GT}=F(S_{1T})-F(G_T)</math></p>	<p>( )</p>	<p>:F(G<sub>T</sub>)</p>
	$D_{GC}$	:F(G <sub>1C</sub> )
<p>∴</p> <p><math>D_{GC}=F(S_{1C})-F(G_C)</math></p>	<p>( )</p>	<p>:F(G<sub>1T</sub>)</p>
	<b>(SA:3)</b>	
<p><math>T=A_1, T_0=A_2, Total=0, Accept=0,</math> <math>Count=0</math></p>	<p>( )</p>	<p>( )</p>
<p><math>G_1, G, S_1, S</math></p>		<p><math>e^{\left(\frac{D_{SC}}{T}\right)}</math></p>
<p><math>F(G_{1T}), F(G_{1C}), F(G_T), F(G_C), F(S_T), F(S_C)</math></p>		<p><math>D_{ST}</math></p>
<p><math>T &lt; T_0</math>   <math>Count=A_3</math></p>	<p><math>S_1</math></p>	<p>( )</p>
<p><math>D_{SC}, D_{ST}, S</math></p>	<p><math>F(S_{1C}), F(S_{1T})</math></p>	<p><math>D_{ST}=F(S_{1T})-F(S_T)</math></p>

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(SA:1,2) .  $D_{ST} < 0$  .

((SA:2) ) ((SA:1) ) .  $D_{GIC} > 0$   $D_{GIT} > 0$  .  
 $D_{GIC} \leq 0$   $D_{GIT} \leq 0$  .

(SA:3) .  $D_{SC} < 0$  .

(SA:3) .  $D_{GIC}, D_{GC}, D_{GT}$  .  
 $D_{GIC} < 0$   $D_{GC} < 0$   $D_{GT} \leq 0$  .

(SA:3) ( )  $F(S_C) F(S_T) S$   $F(S_{IC}) F(S_{IT}) S_1$  .  
 0  $F(G_{IC}) F(G_{IT}) G_1$  .  
 Accept=Accept+1 Count

$u < e^{\left(\frac{D_{SC}}{T}\right)}$  .

(CD )  $F(S_T) S$   $F(S_{IC}) F(S_{IT}) S_1$  .  
 CD Accept=Accept+1  $F(S_C)$

Total=Total+1 .  
 Accept>A<sub>5</sub> Total>A<sub>4</sub> .

(Accept / Total)\*100<Percent .

) CD / / ( Count=Count+1 .  
 Total=0 T=Gam\*T.  
 Accept=0

( ) G<sub>1</sub> .

( ) .  
 (.) (SA:3) (SA:2) (SA:1)

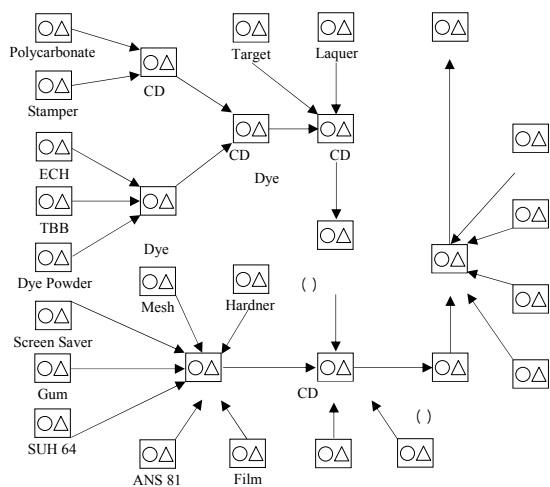
( (SA:3) (SA:1,2)

Percent

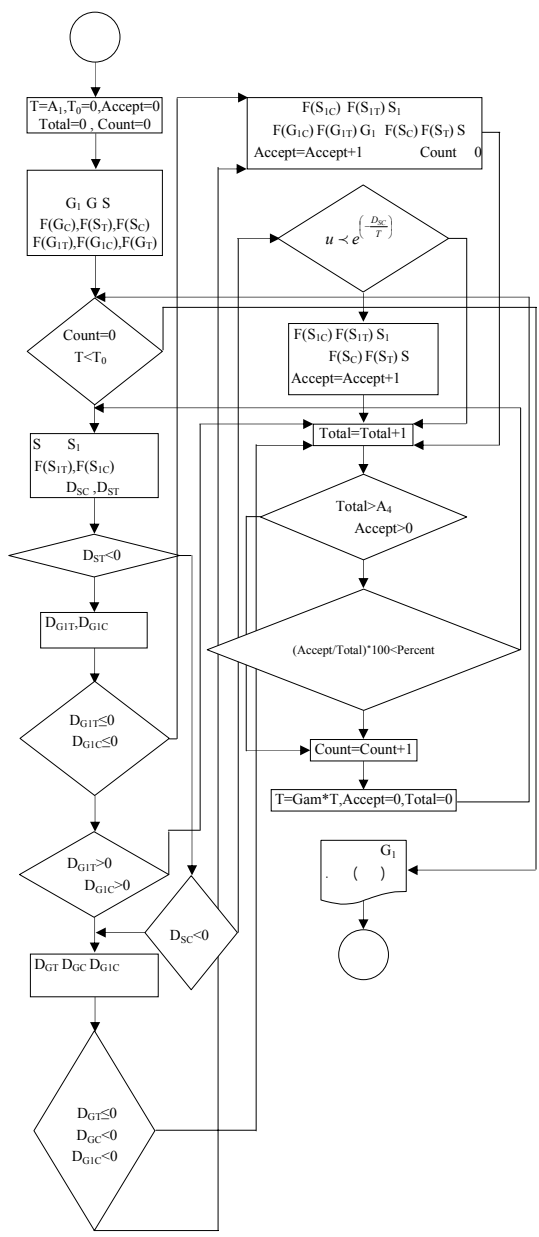
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(SA:1)



(SA:3)



(SA:3)

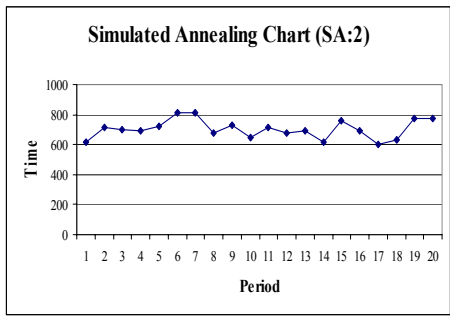
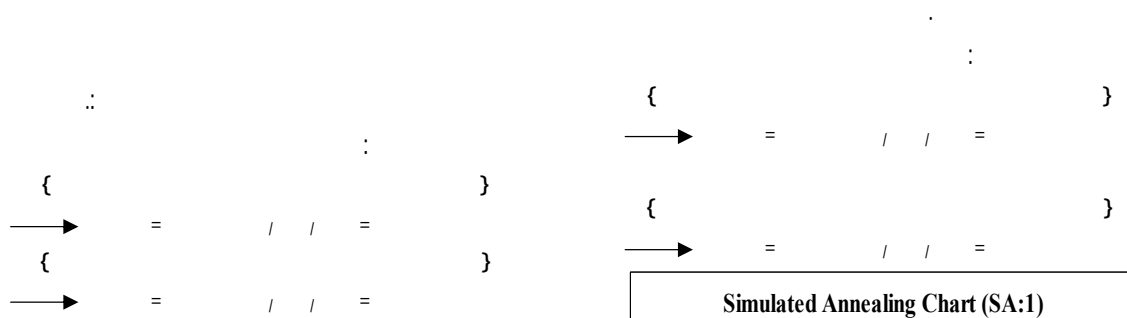
.CD

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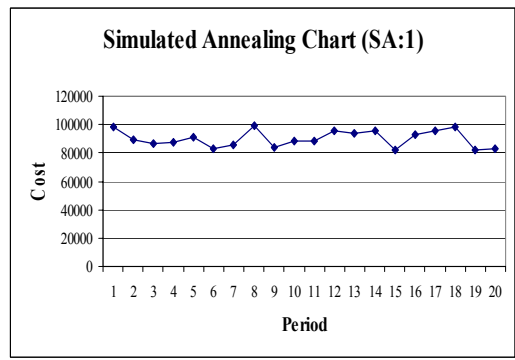
/		- Satti	ANS 81		/ / /	-Makrolon	Polycarbonate			
/		- Sericol			/ / /	- Lexan				
/		- Kiwobond			/ / /	- Lupilon				
/			Film		/ / /	- Panlite				
/					/ / /	- Wonderlite				
/ /		- Sericol			/	- Hamatech	Stamper			
/ /		- Dubuit			/	-H.T.C				
/ /		- Tong Jou			/	- Tiko jon	ECH			
/ /		- Pancolor			/	- Humanki				
/		- Astinum			/	- Kain hen	TBB			
/		- Kamman			/	- Tiko jon				
/		- Hankey			/	- Humanki				
/					/	- Kain hen	Dye Powder			
/					/ /	- Ultergreen				
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/					/ / /	- Hamatech	Target			
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/	CD		Dye		/	- Tong Jou	Laquer			
/	CD				/	- Satti	Screen Saver			
/	CD		CD		/	- Sefar				
/	CD		Dye CD		/	- Satti	Mesh			
/	CD		CD		/	- Sefar				
/	CD		()		/	- Satti	Hardner			
/	CD		CD		/	- Sericol				
/	CD		()		/	- Koatazol				
/	CD				/	- Satti		Gum		
/	CD				/	- Sericol				
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/					/	- Sericol				
/					/	- Kiwobond				

(SA:2)

(SA:1)



-(SA:2) :  
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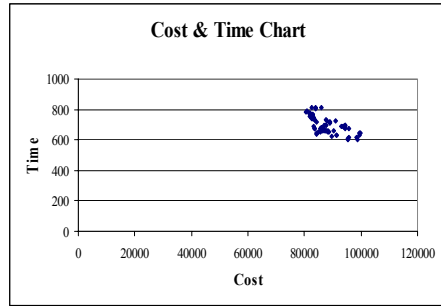
-(SA:1) :  
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Y=-633ln(x) + 7948.5

Y=725 → X=90357.78 ≈ 90358

→ 90358000

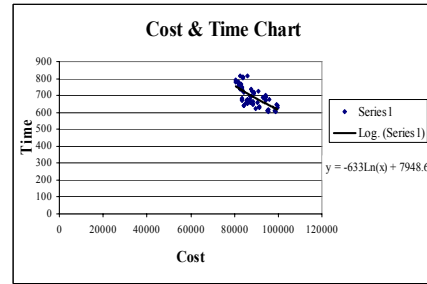


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(SA:3)

(SA:3)



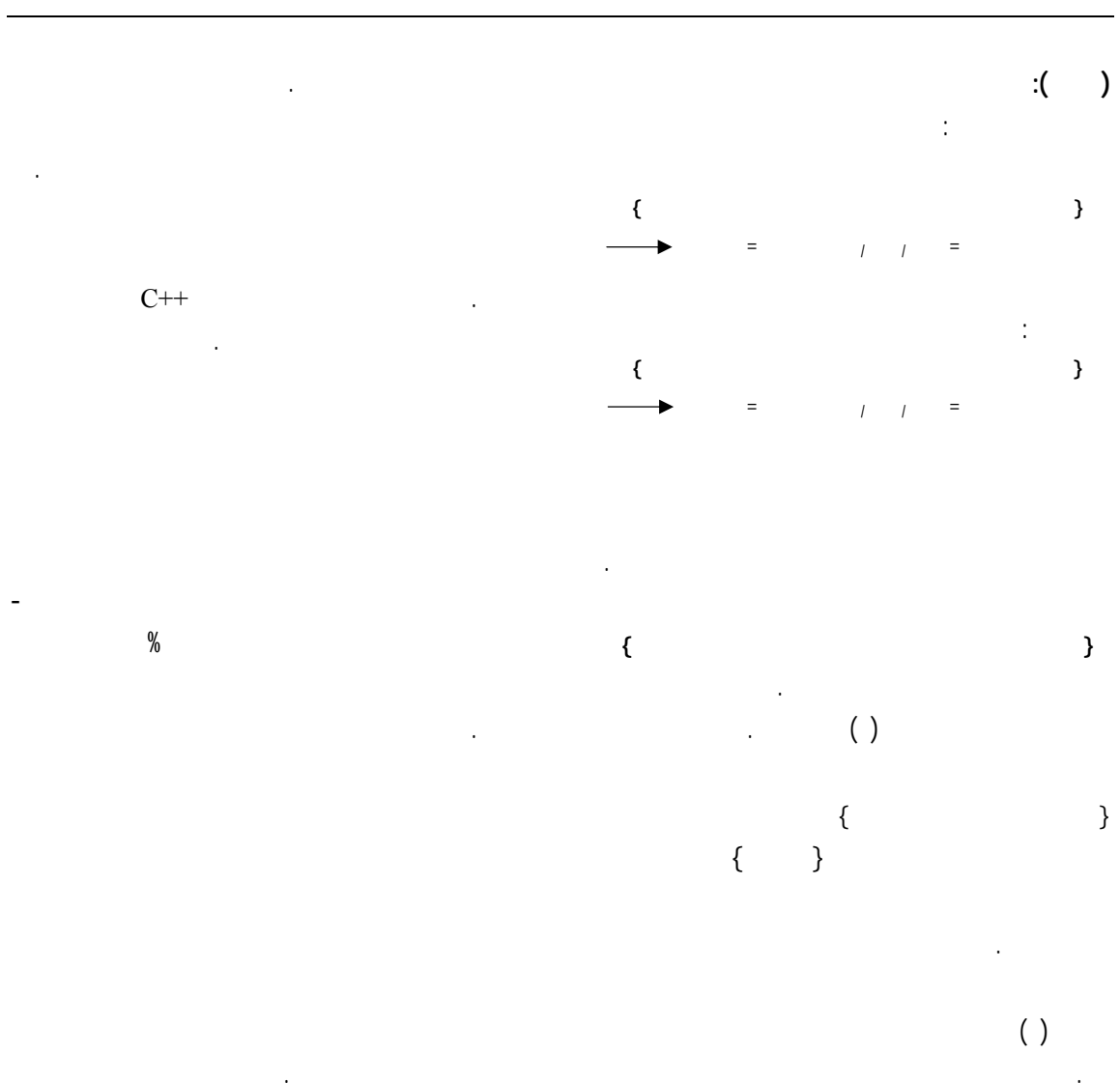
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/	/	- Wonderlite	Polycarbonat	
/		- H.T.C	Stamper	
/		- Humanki	ECH	
/		- Kain hen	TBB	
/	/	- MY-317	Dye Powder	
/		- x	Target	
/		- Tong Jou	Laquer	
/		- Sefar	Screen Saver	
/		- Sefar	Mesh	
/		- Sericol	Hardner	
/		- Sericol	Gum	
/		- Kiwobond	SUH 64	
/		- Kiwobond	ANS 81	
/			Film	
/	/	- Pancolor		
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|--|--------------------|--------------------|
| 1 - Lee  | 2 - Billington     | 3 - Pagel          |
| 4 - Lawrance                                   | 5 - Varma          | 6 - Landsom        |
| 7 - Lander                                     | 8 - Online         | 9 - Pulling System |
| 10- Fukuda                                     | 11 – Kaplan        | 12 - Song          |
| 13- Liu  | 14- Zhao           | 15 - Graves        |
| 16- Croos Functional Teams                     | 17 - Spanning Tree | 18 - Multi Echelon |
| 19- Zeng                                       |                    |                    |
| 20 - Sharp Oliver & Palovich Busygin           |                    |                    |
| 21 - Simulated Annealing (SA)                  |                    |                    |
| 22- Multiple Objective Decision Model (MODM)   |                    |                    |
| 23 - Minimizing Unit Manufacturing Cost (MUMC) |                    |                    |
| 24 - Minimizing Unit Manufacturing Time (MUMT) |                    |                    |
| 25- Compact Disk (CD)                          |                    |                    |