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Question No: 01   **(10)**

Compute Load Distance (LD) scores for the below given current and proposed designs and identify which design is the better one;
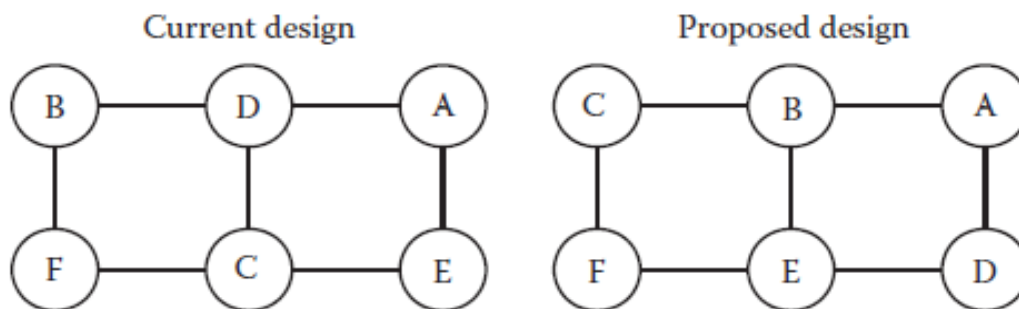

Figure 1 Two Designs

	A	B	C	D	E	F
A		20		20		80
B			10		75	
C				15		90
D					70	

Figure 2 Load Matrix

Answer: The LD score between work centers *i* and *j* is found as follows:

- ❖ LD score(i, j)=Load(i, j) × Distance (i, j)

LD Calculation for Two Designs

Centers	Load	Current Design		Proposed Design	
		Distance	LD Score	Distance	LD Score
(A,B)	20	2	40	1	20
(A,D)	20	1	20	1	20
(A,F)	80	3	240	3	240
(B,C)	10	2	20	1	10
(B,E)	75	3	225	1	75
(C,D)	15	1	15	3	45
(C,F)	90	1	90	1	90
(D,E)	70	2	140	1	70
Total			790		570

Question No: 02   (10

A process management team has studied a process and has developed the flowchart in Figure 3. The team also has determined that the expected waiting and processing times (in minutes) corresponding to each activity in the process are as shown in Table 1.

     i.   Calculate the average CT for this process.

🞂 **Average CT:** 10+10x20+90x24+25+15x(12+23+35)+15= **34.60**

     ii.   Calculate the CT efficiency.

🞂 **CT efficiency = Process Time / CT**

           Process time =12+10x18+90x30+17+1.15x (12+25+7) +10 =29.69

  CT efficiency = 34.60/29.69 = 1.17

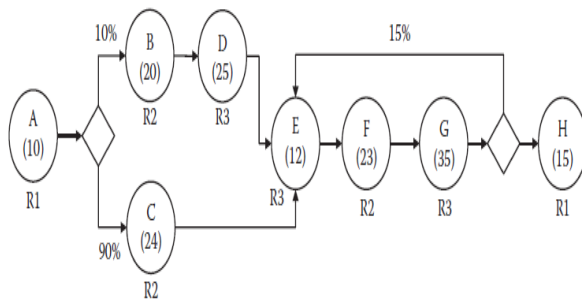| Activity	Waiting Time (Min)	Processing Time (Min)
A	20	12
B	15	18
C	5	30
D	12	17
E	3	12
F	5	25
G	8	7
H	5	10
I	15	25
J	5	20
K	4	10

Figure 3 Process Flow Chart