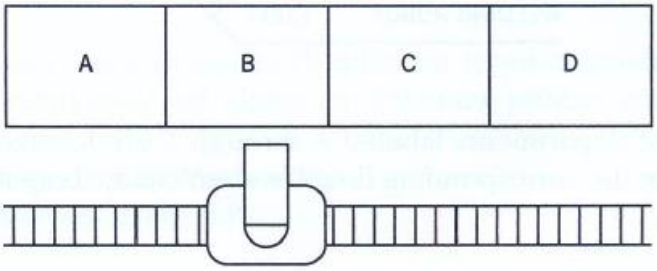
6.14 Four equal-sized machines are served by an automated guided vehicle (AGV) on a linear bidirectional track, as shown in the figure below. Each machine block is 30′ × 30′. The product routine information and required production rate are given in the table below. Determine a layout arrangement based on the pairwise exchange method. Assume that the pickup/delivery stations are located at the midpoint of the machine edge along the AGV track.



Product	Processing Sequences	Weekly Production
1	B D C A C	300 units
2	B D A C	700 units
3	D B D C A C	900 units
4	A B C A	200 units

Q. 6.14

Asad Ullah : 11-IE-25
Naseem Abbas = 11-IE-51
M-Jamshaid : 11-IE-52
Group # 07

Sol

Flow Between chart.

Machine	A	B	C	D
A	-	200	3300	700
B		-	200	2800
C			-	1200
D				

Arrangement per cost.

ABCD = 30(200+200+1200)+60(3300+2800)+90(700) = 477000

BACD = 30(200+3300+1200)+60(200+700)+90(2800) = 477000

CBAD = 30(200+200+700)+60(3300+2800)+9(1200) = 507000

DBCA = 30(2800+200+3300)+60(1200+200)+90(700) = 336000

BDCA = 30(2800+1200+3300)+60(200+700)+90(200) = 291000

CBDA = 30(200+2800+700)+60(1200+200)+90(3300) = 492000

Final arrangement.

BDCA = **291000**