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CLASS: S. Y. B.Tech (COMPUTER ENGG.)

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### EXPERIMENT No. 5

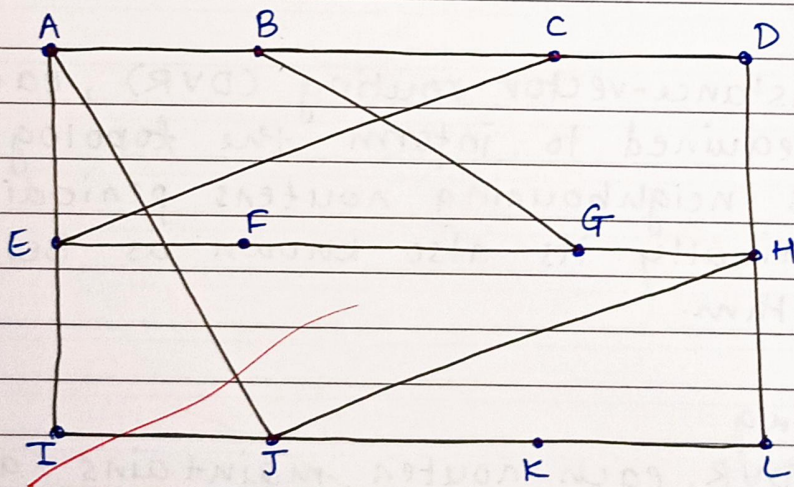
AIM: Implementing Routing Protocol  $\Rightarrow$  Distance vector routing (DVR)

#### THEORY:

- In distance-vector routing (DVR), each router is required to inform the topology changes to its neighbouring routers periodically.
- Historically it is also known as Bellman-Ford algorithm.
- Working
  - In DVR, each router maintains a routing table. It contains only one entry for each router. It contains two parts - a preferred outgoing line to use for that destination and an estimate of time (delay). Tables are updated by exchanging the information with the neighbour's nodes.



- Each router knows the delay in reaching its neighbours (Ex- send echo request)
  - Routers periodically exchange routing tables with each of their neighbours.
  - It compares the delay in the ~~neigh~~ local table with the delay in the neighbour's table and the cost of reaching that neighbour
  - If the path via the neighbour has a lower cost, then the router updates its local table to forward packets to the neighbour.
- For Eg:



A subnet



To					New estimated delay from J	
	A	I	H	K	↓	Line
A	0	24	20	21	8	A
B	12	36	31	28	20	A
C	25	18	19	36	28	I
D	40	27	8	24	20	H
E	14	7	30	22	17	I
F	23	20	19	40	30	I
G	18	31	6	31	18	H
H	17	20	0	19	12	H
I	21	0	14	22	10	I
J	9	11	7	10	0	-
K	24	22	22	0	6	K
L	29	33	9	9	15	K

JA      JI      JH      JK  
 delay   delay   delay   delay  
 is        is        is        is

8                  10                  12                  6

vectors received  
 from J's four  
 neighbours

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