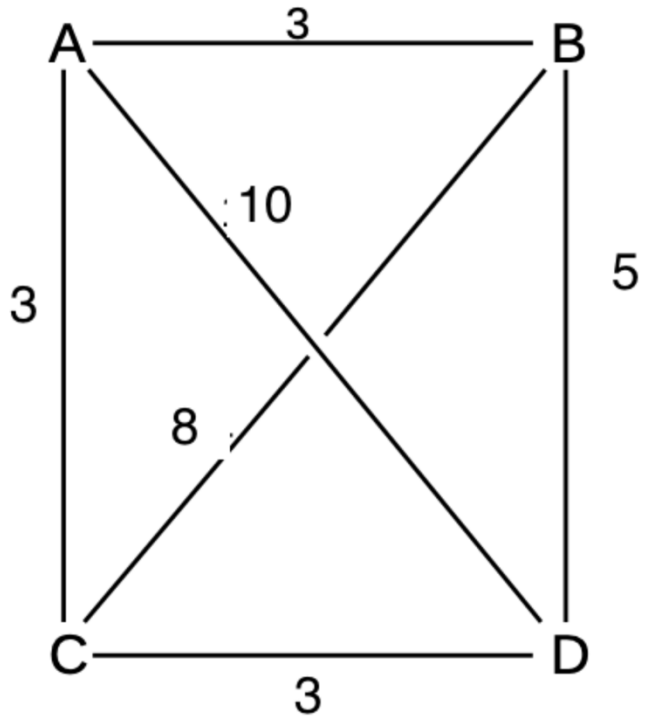
Question:

Q1. [4x5=20]



Consider the network shown above. Using the OSPF algorithm, calculate the shortest paths from B to all the other routers. (That is, show the status of the R, T, and current node in every iteration of the algorithm.

Ans:

- **Initially:**

Node: B

Set (R): {B}
R = {B, B, 0}
T = {<A, A, 3>, <D, D, 5>, <C, C, 8>}

Here, Shortest is <A, A, 3>

- **Iteration 1:**

Node: A

Set (R): {B, A}
R = {<B, B, 0>, <A, A, 3>}
T = {<C, C, 6>, <D, D, 5>}

C: 3+3, D: 5 (Lesser than 13)

Now as D here has the smallest value;

- **Iteration 2:**

Node: D

Set (R): {B, A, D}
R = {<B, B, 0>, <A, A, 3>, <D, D, 5>}
T = {C, C, 6}

C: 6 (Less than 13) – No change among.

- **Iteration 3:**

Node: C

Set (R): {B, A, D, C}
T = {}

Hence, the shortest paths from B to all the other routers.

B → A: 3 (B to A)

B → B: 0

B → C: 6 (B to C via A)

B → D: 5 (B to D)