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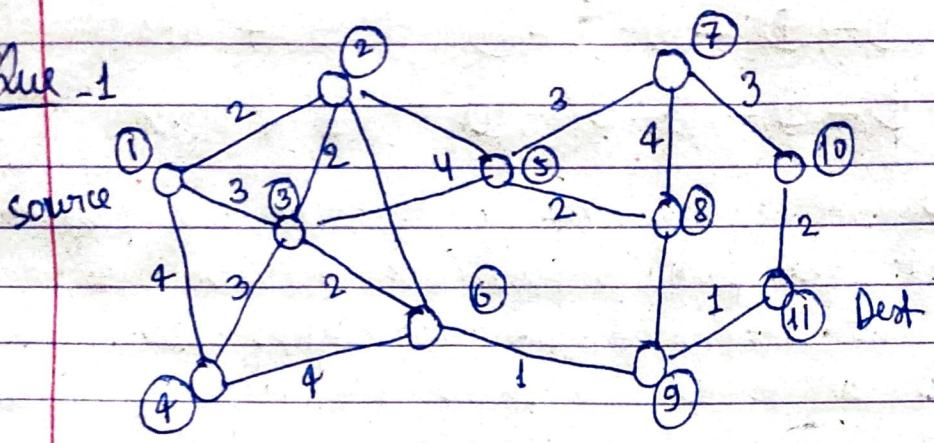
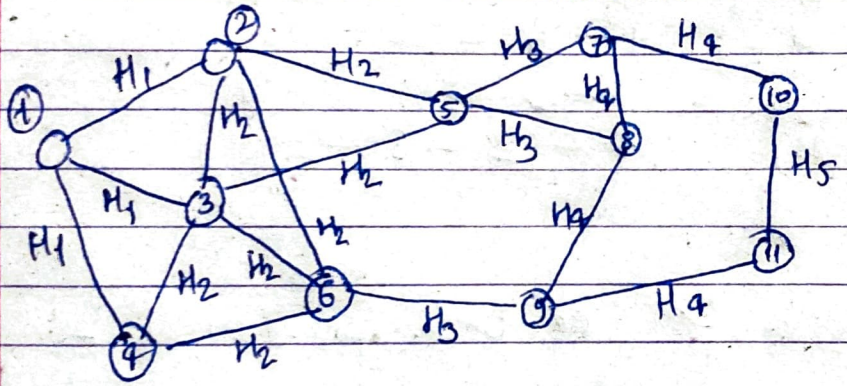


lets draw HOPs on network



above we can see total of 5 HOPs can be but want HOPs to be as minimum to avoid network delay to reach to the destination from source.

(i) finding HOPs

(a) - ① - ② - ⑤ - ⑦ - ⑩ - ⑪ = 5 HOPs

(b) - ① - ③ - ⑤ - ⑦ - ⑩ - ⑪ = 5 HOPs

(c) ① - ③ - ⑤ - ⑧ - ⑦ - ⑩ - ⑪ = 5 HOPs

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(d) ①–③–⑥–⑨–⑪ = 4 HOPs

(e) ①–④–⑥–⑨–⑪ = 4 HOPs

(f) ①–②–⑥–⑨–⑪ = 4 HOPs

As we can see we have two choices to select the path 5 HOPs or 4 HOPs and we want to minimize the HOPs. so we have a total 3 paths having 4 HOPs

(ii) path are

(a) - 1 – 4 – 6 – 9 – 11

(b) - 1 – 3 – 6 – 9 – 11

(c) 1 – 2 – 6 – 9 – 11

(iii) path cost for each path will be

(a) 1 – 4 – 6 – 9 – 11 ⇒ 4 + 4 + 1 + 1 = 10

(b) 1 – 3 – 6 – 9 – 11 ⇒ 3 + 2 + 1 + 1 = 7

(c) 1 – 2 – 6 – 9 – 11 ⇒ 2 + 5 + 1 + 1 = 9