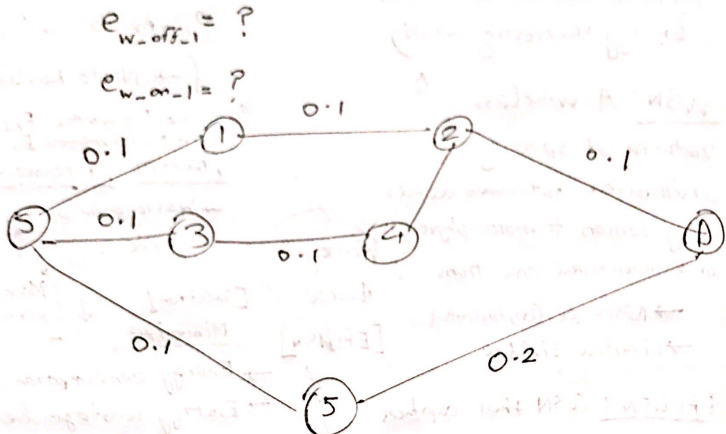


Prev. Year

①



$$e_{w-off-1} = 0.7 + 0.2 \leftarrow = 0$$

$$e_{w-on-1} = 0$$

$$e_{w-off-2} = 0.1$$

$$e_{w-on-2} = 0$$

$$e_{w-off-3} = 0.1$$

$$e_{w-on-3} = 0$$

$$e_{w-off-4} = 0.1$$

$$e_{w-on-4} = 0$$

$$e_{w-off-5} = 0$$

$$e_{w-on-5} = 0$$

$$C(\sigma_{1-2}) = \text{Path transmission cost} + \text{on-path wastage} + \text{off path wastage}$$

$$= (0.1 + 0.1 + 0.1) + 0 + (0.1 + 0.1)$$

$$= 0.5$$

$$C(\sigma_{3-4-2}) = (0.1 + 0.1 + 0.1) + 0 + 0 \quad [\text{Best Path}] \quad (\text{Ans.})$$

$$= 0.3$$

$$C(\sigma_5) = (0.1 + 0.2) + 0 + (0.1 + 0.1 + 0.1)$$

$$= 0.6$$

③ considering fixed ETX

	Hop Count	ETT $\left[ \frac{S}{2} \times \text{ETX} \right]$
$\sigma_{1-2}$	2	$\frac{.15}{1} + \frac{.15}{2} + \frac{.15}{1} = 0.375 \text{ ETX}$
$\sigma_{1-3-4-2}$	4	$\frac{.15}{1} + \frac{.15}{2} + \frac{.15}{3} + \frac{.15}{2} + \frac{.15}{3} = 0.4 \text{ ETX}$
$\sigma_{1-2-4-5}$	4	$\frac{.15}{1} + \frac{.15}{2} + \frac{.15}{1} + \frac{.15}{2} + \frac{.15}{3} = 0.5 \text{ ETX}$
$\sigma_{1-3-4-5}$	4	$\frac{.15}{1} + \frac{.15}{2} + \frac{.15}{3} + \frac{.15}{2} + \frac{.15}{3} = 0.4 \text{ ETX}$
$\sigma_{3-1-2}$	3	$\frac{.15}{2} + \frac{.15}{2} + \frac{.15}{2} + \frac{.15}{1} = 0.375 \text{ ETX}$
$\sigma_{3-4-5}$	3	$\frac{.15}{2} + \frac{.15}{3} + \frac{.15}{2} + \frac{.15}{3} = 0.25 \text{ ETX}$
$\sigma_{3-4-2}$	3	$\frac{.15}{2} + \frac{.15}{3} + \frac{.15}{1} + \frac{.15}{1} = 0.425 \text{ ETX}$
$\sigma_{3-1-2-4-5}$	5	$\frac{.15}{2} + \frac{.15}{2} + \frac{.15}{2} + \frac{.15}{1} + \frac{.15}{2} + \frac{.15}{3} = 0.5 \text{ ETX}$
minimum	2	<del>0.5 ETX</del> 0.25 ETX

$$\sigma_{1-2} = 2$$

Ans: Based on Hop Count, ~~1-2~~ is best path

based on ETT,  $\left[ \sigma_{3-4-5} = 0.25 \text{ ETX} \right]$  is the best path