

# A1110 Assignment 1

## 11.16.3.16

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**Question:** : 16 : Events E and F are such that  $P(\text{Not E or not F})=0.25$ , State whether E and F are mutually exclusive.

**Solution:** :

As given in the question ;

$$\Pr(\bar{E} + \bar{F}) = 0.25 \quad (1)$$

As ,

$$\begin{aligned} \Pr(\bar{E} + \bar{F}) &= \Pr(\overline{EF}) \\ &\implies \Pr(\overline{EF}) \end{aligned} \quad (2)$$

$$\implies 1 - \Pr(EF) = 0.25$$

$$\implies \Pr(EF) = 0.75 \quad (3)$$

$$\therefore \Pr(EF) \neq 0 \quad (4)$$

As, the condition of mutually exclusive is

$$\Pr(EF) = \emptyset \quad (5)$$

$\therefore$  E and F are not mutually exclusive events.