

EE22BTECH11032 - Meenakshi

Question :

The probabilities of occurrences of two independent events A and B are 0.5 and 0.8 respectively. What is the probability of occurrence of at least A or B (rounded off to 1 decimal place)?

(GATE CE 2023)

Solution:

Given,

$\Pr(A) = 0.5$ and $\Pr(B) = 0.8$

Probability of occurrence of at least A or B is given by $\Pr(A + B)$

Since A and B are independent events, we can say that:

$$\Pr(A + B) = \Pr(A) + \Pr(B) - \Pr(AB) \quad (1)$$

$$= \Pr(A) + \Pr(B) - \Pr(A) \times \Pr(B) \quad (2)$$

$$= 0.5 + 0.8 - 0.5 \times 0.8 \quad (3)$$

$$= 0.9 \quad (4)$$