K19FG-15-JAN

Friday, January 15, 2021

An MISA applies for a job in two firm X ad y.
The Prob. of his being selected in X firm is
0.7 and being rejected in y is 0.5. The prob. of atleast one to be rejected is that 0.6. Find the hib that he will be selected in one of the form. Solk - Let A = Selected an X firm B = Selected in y tirm P(A) = 0.7 P(B) = 0.5 $P(A \cup B) = 0.6$ $P(A \cup B) = 1 - P(B) = 1 - 0.5 = 0.5$ P(AUB) = ?

: P(AUB) = P(A) + P(B) - P(ANB) = 0.7 + 0.5 - P(ANB)

·: P(Ā UĒ) =0.6 P(ANB) = 0.6 1-P(ANB)=0.6=) P(ANB) = 1-0.6=0.4 -> P(AUB) = 0.7 +0.5-0.4 = 0.8 A

Conditional Probability: - Ut And B are two events then of the Prob. of first one is affected by second event then A is Called Conditional event under B and such Conditional events are devoted by AB= A/B event is that event in which sample space is Biad favorble space is ANB. No. of (AMB) = [PLAMB]

$$P(A|B) = \frac{P(A \cap B)}{P(B)} \Rightarrow \frac{P(A \cap B)}{P(B)}$$

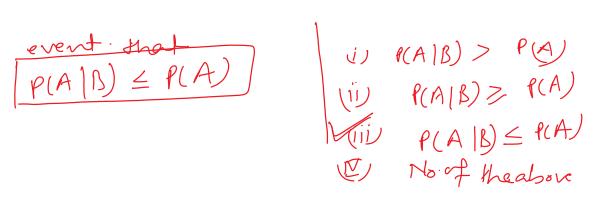
$$\Rightarrow P(A \cap B) = P(B) \cdot P(A \mid B) = \# Multiplication Thin
$$P(A \cap B) = P(A) \cdot P(B \mid A) = \#$$$$

Independent events of Let A and B are two events then A and B are called independent to each other if P(A|B) = P(A) or P(B|A) = P(B)

P(ANB) =
$$P(A) \cdot P(B|A) = P(A) \cdot P(B)$$

$$P(ANB) = P(A) \cdot P(B) = P(A) \cdot$$

Noto: - Conditional Prob is always less than actual event : that (i) P(A|B) > P(A)



A and B are two events then if ANB = f
 if A and B are disjoint events then they are dependent events

or if ANB # + . A and B are dependent events

ANB = + = A and B are dependent events

it is noted that A and B are Parsible events
ie P(A)>0, P(B)>0

$$\frac{1}{\text{Note:}} = \frac{1}{\text{P(A)}} = 0 = \frac{\text{P(A)}}{\text{P(B)}} = \frac{1}{\text{P(B)}} = 0 = 0$$

Theorem: - Let A, B and C are three events than

P(AUB | C) = P((AUB) | C) = P(A|C) + P(B|C) (AUB)

-P(ANB|C)

ANAY NEXLAM

PLAUBIC) = P(A/C) + P(B/C) -P(ANB/C)

Proof: $-P(AUB|C) = P((AUB) \cap C) = P((AUB) \cap C)$

 $= \frac{P(ANC) + P(BNC) - P((ANC) \cap (BNC))}{P(C)}$

$$= \frac{\rho(A \cap S)}{\rho(S)} + \frac{\rho(B \cap S)}{\rho(S)} - \frac{\rho(A \cap B) \cap C}{\rho(S)}$$

$$= \frac{\rho(A \mid C)}{\rho(S)} + \frac{\rho(B \mid C)}{\rho(S)} - \frac{\rho(A \cap B \mid C)}{\rho(S)}$$

$$= \frac{\rho(A \mid C)}{\rho(S)} + \frac{\rho(B \mid C)}{\rho(S)} - \frac{\rho(A \cap B \mid C)}{\rho(A \cap B)}$$

$$= \frac{\rho(A \mid C)}{\rho(A \cap B)} + \frac{\rho(A \cap B)}{\rho(A \cap B)} + \frac{\rho(A \cap B)}{\rho($$