AI1103 : Assignment 2

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Download latex codes from

https://github.com/srivatsav01/Assignment−2/blob/main/Assignment−2.tex

Question 31

An examination consists of two papers,Paper 1 and Paper 2.The probability of failing in Paper 1 is 0.3 and that of Paper 2 is 0.2.Given that a student has failed in Paper 2 ,the probability of failing in Paper 1 is 0.6.The probability of a student failing in both the papers is?

Solution

Let A be the event that a student fails in Paper 1
Let B be the event that a student fails in Paper 2

Given

$$\Pr(\mathbf{A}) = 0.3, \Pr(\mathbf{B}) = 0.2, \Pr(\mathbf{A}|\mathbf{B}) = 0.6$$

By defination

$$\Pr(\mathbf{A}|\mathbf{B}) = \frac{\Pr(\mathbf{AB})}{\Pr(\mathbf{B})} \tag{1}$$

$$\Pr(\mathbf{AB}) = \Pr(\mathbf{A}|\mathbf{B}) \times \Pr(\mathbf{B}) \tag{2}$$

$$\Pr(\mathbf{AB}) = 0.6 \times 0.2 \tag{3}$$

$$\Pr(\mathbf{AB}) = 0.12 \tag{4}$$