SHIKSHA CLASSES

Question Paper

Subject : Maths - I **Total Marks :20**
Class : XI **9 : Probability** **Time : 1 Hour**

SECTION - A

Q.1 : Choose the correct option : 4

i) A fair is tossed twice. What are the odds in favour of getting 4, 5 or 6 on the first toss and 1, 2, 3 or 4 on the second die?

a) 1 : 3 b) 3 : 1

c) 1 : 2 d) 2 : 1

ii) There are 2 shelves. One shelf has 5 Physics and 3 Biology books and the other has 4 Physics and 2 Biology books. The probability of drawing a Physics book is

a) $\frac{9}{14}$ b) $\frac{31}{48}$

c) $\frac{9}{38}$ d) $\frac{1}{2}$

Q.2 : **Solve the following questions:** 2

i) If $P(AnB) = \frac{1}{2}$, $P(BnC) = \frac{1}{3}$, $P(CnA) = \frac{1}{6}$ then find P(A), P(B) and P(C).

ii) If $A \cup B \cup C = S$ (the sample space) and A, B and C are mutually exclusive events, can the following represent probability assignment?

a) P(A) = 0.2, P(B) = 0.7, P(C) = 0.1

SECTION B

: Solve the following : (ANY 2) 4

Q.3 : A bag contains 7 black and 4 red balls. If 3 balls are drawn at random, find the probability that:

i) all are black ii) one is black and two are red.

Q.4 : Two fair dice are thrown. Find the probability that the number on the upper face of the first die is 3 or sum of the number on their upper face is 6.

Q.5 : Three fair coins are tossed. What is the probability of getting three heads given that at least two coins show heads.

SECTION C

: Solve the following : (ANY 2) 6

Q.6 : If E_1 and E_2 are equally likely, mutually exclusive and exhaustive events and $P\left(\frac{A}{E_1}\right) = 0.2$, $P\left(\frac{A}{E_2}\right) = 0.3$. Find $P\left(\frac{E_1}{A}\right)$.

Q.7 : In a single toss of a fair die, what are the odds against event that number 3 or 4 turns up?

Q.8 : If $P(A) = P\left(\frac{A}{B}\right) = \frac{1}{5}, P\left(\frac{B}{A}\right) = \frac{1}{3}$, then find:

i) $P(A^1/B)$

ii) $P(B^1/A^1)$

SECTION D

: Solve the following : (ANY 1) 4

Q.9 : A and B throw a die alternatively till one of them a 3 and wins the game. Find the respective probabilities of winning. (Assuming A begins the game)

Q.10 : A number is drawn at random from the numbers 1 to 50. Find the probability that it is divisible by 2 or 3 or 10

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