Probability

MCQ

1 If E is any event then $P(E)$ lies in the interval :
(a)$(-\infty, +\infty)$ (b)$[0, 1]$ (c)$(0, 1)$ (d)$[-1, 1]$

2 If $P(E) = \frac{1}{5}$ then $P(not\ E)$ is equal to :
(a)$\frac{3}{5}$ (b)$-\frac{1}{5}$ (c)$\frac{4}{5}$ (d)$\frac{5}{4}$

3 Number of elements in the sample space of throwing two dice are :
(a)36 (b)12 (c)6 (d)216

4 Number of elements in the sample space of tossing 3 coins are :
(a)6 (b)9 (c)3 (d)8

5 One card is drawn from a pack of well shuffled 52 cards. The probability that it is a king or spade is :
(a)$\frac{1}{26}$ (b)$\frac{3}{26}$ (c)$\frac{4}{13}$ (d)$\frac{3}{13}$

6 Two dice are thrown , probability of getting an even prime number on both dice are :
(a)$\frac{2}{36}$ (b)$\frac{3}{36}$ (c)$\frac{5}{36}$ (d)$\frac{1}{36}$

7 If $\frac{2}{5}$ is the probability of occurrence of any event then probability of its non-occurrence is :
(a)$\frac{1}{5}$ (b)$\frac{5}{2}$ (c)$\frac{5}{3}$ (d)$\frac{3}{5}$

8 Probability of a sure event is :
(a)1 (b)0 (c)-1 (d)2

9 Probability of an impossible event is :
(a)1 (b)0 (c)-1 (d)2

10 The probability that a leap year will have 53 Fridays is
(a)$\frac{1}{7}$ (b)$\frac{2}{7}$ (c)$\frac{3}{7}$ (d)$\frac{4}{7}$

2 & 4 Marks Questions

1. Write the sample space of the following events :
   (i) A coin is tossed three times.
   (ii) 4 coins are tossed once.
   (iii) 2 dice are thrown.
   (iv) A coin is tossed and a die is thrown.
2. A pair of dice is thrown, describe the following events :
   (i) A : getting the sum of numbers appeared greater then 8.
   (ii) B : 2 occur on either die.
   (iii) C : getting the sum of numbers appeared is at least 7.
   Which pair of events is mutually exclusive ? Also find $A \cup B$, A' , $B \cap C$, $A \cap B$, $A \cap C$.
3. Two dice are thrown, describe :
   (i) A : getting an odd number on first die.
   (ii) B : getting the sum of numbers less than or equal to 6.
   Also describe A' , B' , $A \cup B$ and $A \cap B$.
4. One card is drawn from a well shuffled deck of 52 cards. If each outcome is equally likely, calculate the probability that the drawn card is (i) a diamond (ii) not an ace (iii) a black card.
5. A fair coin with 1 marked on one face and 6 on the other face and a fair die are both tossed, find the probability that the sum of numbers appeared is (i) 3 (ii) 12 .

6. **Three coins are tossed once, find the probability of getting :**
   - **(i) At most 2 heads.**
   - **(ii) At least 2 tails.**
7. **If 7 cards are drawn from a well shuffled deck of 52 cards, find the probability of getting :**
   - **(i) All kings.**
   - **(ii) At least 3 kings.**
8. **4 cards are drawn from a well shuffled deck of 52 cards, find the probability of getting :**
   - **(i) 3 diamonds and one spade.**
   - **(ii) At least 2 hearts.**
   - **(iii) At most 2 queens.**
9. **Out of 100 students, two sections of 40 and 60 are formed. If you and your friend are among the 100 students, hat is the probability that :**
   - **(i) You both enter in the same section.**
   - **(ii) You both enter in the different sections.**

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