DPP
DAILY PRACTICE PROBLEMS

CLASS : XIth **SUBJECT : MATHS**
DATE : **DPP NO. :5**

Topic :-PROBABILITY

1. In a certain population 10% of the people are rich, 5% are famous and 3% are rich and famous. The probability that a person picked at random from the population is either famous or rich but not both, is equal to

a) 0.07 b) 0.08 c) 0.09 d) 0.12

2. Two aeroplanes I and II bomb a target in succession. The probabilities of I and II scoring a hit correctly are 0.3 and 0.2, respectively. The second plane will bomb only if the first misses the target. The probability that the target is hit by the second plane, is

a) 0.06 b) 0.14 c) 0.32 d) 0.7

3. Box A contains 2 black and 3 red balls. While box B contains 3 black and 4 red balls. Out of these two boxes one is selected at random; and the probability of choosing box A is double that of box B. If a red ball is drawn from the selected box, then the probability that it has come from box$B$ .is

a) $\frac{21}{41}$ b) $\frac{10}{31}$ c) $\frac{12}{31}$ d) $\frac{13}{41}$

4. A,B,$C$are any three events. If $P(S)$ denotes the probability of S happening, then $P(A \cap (B \cup C))$ =

a) $P(A) + P(B) + P(C) - P(A \cap B) - P(A \cap C)$
b) $P(A) + P(B) + P(C) - P(B)P(C)$
c) $P(A \cap B) + P(A \cap C) - P(A \cap B \cap C)$
d) $P(A) + P(B) + P(C)$

5. The value of C for which $P(X = k) = C\,k^2$ can serve as the probability function of a random variable X that takes value 0, 1, 2, 3, 4 is

a) $\frac{1}{30}$ b) $\frac{1}{10}$ c) $\frac{1}{3}$ d) $\frac{1}{15}$

6. In tossing of a coin $(m + n)(m > n)$ times, the probability of coming consecutive heads at least m times is

a) $\frac{n+2}{2^{m+1}}$ b) $\frac{m-n}{2^{m+n}}$ c) $\frac{m+n}{2^{m+n}}$ d) $\frac{mn}{2^{m+n}}$

7. In $x = 33^n$,n is a positive integral value, then what is the probability that x will have 3 at its units place?

a) 1/3 b) 1/4 c) 1/5 d) 1/2

8. Two numbers are selected randomly from the set $S = \{1, 2, 3, 4, 5, 6\}$ without replacement one by one. The probability that minimum of the two numbers is less than, 4 is

a) $1/15$ b) $14/15$ c) $1/5$ d) $4/5$

9. $A$and$B$ are two independent event such that $P(A) = \frac{1}{5}, P(A \cup B) = \frac{7}{10}$. Then, $P(\overline{B}) =$

a) $3/8$ b) $2/7$ c) $7/9$ d) None of these

10. In Q. 12 the probability that the mapping is a bijection, is

a) $\frac{1}{n^n}$ b) $\frac{1}{n!}$ c) $\frac{(n-1)!}{n^{n-1}}$ d) $\frac{n!}{n^{n-1}}$

11. An unbiased coin is tossed to get 2 points for turning up a head and one point for the tail. If three unbiased coins are tossed simultaneously, then the probability of getting a total of odd number of points

a) $\frac{1}{2}$ b) $\frac{1}{4}$ c) $\frac{1}{8}$ d) $\frac{3}{8}$

12. In a precision bombing attack there is a 50% chance that any one bomb will strike the target. Two direct hits are required to destroy the target completely. The minimum number of bombs which should be dropped to give a 99% chance or better of completely destroying the target is

a) 10 b) 11 c) 12 d) None of these

13. A coin is tossed n times the probability of getting head at least once is greater than 0.8. Then the least value of such n is

a) 2 b) 3 c) 4 d) 5

14. If $A_1, A_2, \ldots, A_n$ are n independent events such that $P(A_i) = \frac{1}{i+1}, i = 1,2,\ldots,n$.The probability that none of the n events occurs, is

a) $\frac{n}{n+1}$ b) $\frac{1}{n+1}$ c) $\frac{n}{(n+1)(n+2)}$ d) None of these

15. A random variate X takes the values 0, 1, 2, 3 and its mean is 1.3. If $P(X = 3) = 2P(X = 1)$and $P(X = 2) = 0.3$,then$P(X = 0)$ is equal to

a) 0.1 b) 0.2 c) 0.3 d) 0.4

16. Three dice are thrown simultaneously, then probability of throwing a total greater than 4 is

a) $\frac{1}{54}$ b) $\frac{53}{54}$ c) $\frac{5}{108}$ d) None of these

17. A bag contains 6 white and 4 black balls. Two balls are drawn at random. The probability that they are of the same colours, is

a) $\frac{1}{15}$ b) $\frac{2}{5}$ c) $\frac{4}{15}$ d) $\frac{7}{15}$

18. A box contains 3 white and 2 red balls. If we draw one ball and without replacing the first ball, the probability of drawing red ball in the second draw is

a) $\frac{8}{25}$ b) $\frac{2}{5}$ c) $\frac{3}{5}$ d) $\frac{21}{25}$

19. An unbiased coin is tossed fixed number of times. If the probability of getting 4 heads equals the probability of getting 7 heads, then the probability of getting 2 heads is

a) $55/2048$ b) $1/1024$ c) $3/4096$ d) None of these

20. If $P(A \cap B) = \frac{1}{2}, P(\overline{A} \cap \overline{B}) = \frac{1}{3}, P(A) = p, P(B) = 2p$, then the value of p is given by

a) $1/3$ b) $7/18$ c) $4/9$ d) $1/2$