DPP
DAILY PRACTICE PROBLEMS

CLASS : XIIth
DATE :

SUBJECT : MATHS
DPP No. : 5

Topic :-PROBABILITY

1. A quadratic equation is chosen from the set of all quadratic equations which are unchanged by squaring their roots. The chance that the chosen equation has equal roots is -
(A) 1/2 (B) 1/3 (C) 1/4 (D) 2/3

2. In drawing of a card from a well shuffled ordinary deck of playing cards the events 'card drawn is spade' and 'card drawn is an ace' are
(A) mutually exclusive (B) equally likely
(C) forming an exhaustive system (D) none of these

3. A determinant is chosen at random from the set of all determinant of order 2 with elements 0 or 1 only. The probability that the determinant chosen has the value non negative is -
(A) 3/16 (B) 6/16 (C) 10/16 (D) 13/16

4. There are ten prizes, five A's, three B's and two C's, placed in identical sealed envelopes for the top ten contestants in a mathematics contest. The prizes are awarded by allowing winners to select an envelope at random from those remaining. When the 8^{th} contestant goes to select the prize, the probability that the remaining three prizes are one A, one B and one C, is -
(A) 1/4 (B) 1/3 (C) 1/12 (D) 1/10

5. Let A and B are two independent events with P(A) = and P(A $\cup$ B) = then the probabilities of the events P(B), P(A/B) and P(B^c/A) are in
(A) A.P. (B) G.P. (C) H.P. (D) None

6. 'A' and 'B' each have a bag that contains one ball of each of the colours blue, green, orange, red and violet. 'A' randomly selects one ball from his bag and puts it into B's bag. 'B' then randomly selects one ball from his bag and puts it into A's bag. The probability that after this process the contents of the two bags are the same, is -
(A) 1/2 (B) 1/3 (C) 1/5 (D) 1/6

7. Mr. A forgot to write down a very important phone number. All he remembers is that it started with 713 and that the next set of 4 digit involved are 1, 7 and 9 with one of these numbers appearing twice. He guesses a phone number and dials randomly. The odds in favour of dialing the correct telephone number, is
(A) 1 : 35 (B) 1 : 71 (C) 1 : 23 (D) 1 : 36

8. I alternatively toss a fair coin and a fair die until I either toss a head or throw a 2. If I toss the coin first, the probability that I throw a 2 before I toss a head, is
(A) 1/7 (B) 7/12 (C) 5/12 (D) 5/7

9. A & B throw with one dice for a stake of Rs. 99/- which is to be won by the player who first throws 4. If A has the first throw then their respective expectations of rupees are:
(A) 50 & 49 (B) 54 & 45 (C) 45 & 54 (D) none

10. Two cubes have their faces painted either red or blue. The first cube has five red faces and one blue face. When the two cubes are rolled simultaneously, the probability that the two top faces show the same colour is 1/2. Number of red faces on the second cube, is -
(A) 1 (B) 2 (C) 3 (D) 4

11. 7 persons are stopped on the road at random and asked about their birthdays. If the probability that 3 of them are born on Wednesday, 2 on Thursday and the remaining 2 on Sunday is , then K is equal to -
(A) 15 (B) 30 (C) 105 (D) 210

12. An experiment results in four possible out comes S_1, S_2, S_3 & S_4 with probabilities p_1, p_2, p_3 & p_4 respectively. Which one of the following probability assignment is possbile.
[Assume S_1 S_2 S_3 S_4 are pair wise exclusive]
(A) $p_1 = 0.25, p_2 = 0.35, p_3 = 0.10, p_4 = 0.05$
(B) $p_1 = 0.40, p_2 = -0.20, p_3 = 0.60, p_4 = 0.20$
(C) $p_1 = 0.30, p_2 = 0.60, p_3 = 0.10, p_4 = 0.10$
(D) $p_1 = 0.20, p_2 = 0.30, p_3 = 0.40, p_4 = 0.10$

13. In a series of 3 independent trials the probability of exactly 2 success is 12 times as large as the probability of 3 successes. The probability of a success in each trial is:
(A) 1/5 (B) 2/5 (C) 3/5 (D) 4/5

14. Mr. Dupont is a professional wine taster. When given a French wine, he will identify it with probability 0.9 correctly as French and will mistake it for a Californian wine with probability 0.1. When given a Californian wine, he will identify it with probability 0.8 correctly as Californian and will mistake it for a French wine with probability 0.2. Suppose that Mr. Dupont is given ten unlabelled glasses of wine, three with French and seven with Californian wines. He randomly picks a glass, tries the wine and solemnly says : "French". The probability that the wine he tasted was Californian, is nearly equal to -
(A) 07.14 (B) 0.24 (C) 0.34 (D) 0.44

15. A random variable X has the probability distribution :

X :	1	2	3	4	5	6	7	8
p(X):	0.15	0.23	0.12	0.10	0.20	0.08	0.07	0.05

For the events E = {X is a prime number} and F = {X < 4}, the probability P(E ∪ F) is-
(A) 0.35 (B) 0.77 (C) 0.87 (D) 0.50

16. Let A and B be two events such that , P(A ∩ B) = and = , where stands for complement of event A. Then events A and B are-
(A) mutually exclusive and independent (B) independent but not equally likely
(C) equally likely but not independent (D) equally likely and mutually exclusive

17. Three houses are available in a locality. Three persons apply for the houses. Each applies for one house without consulting others. The probability that all the three apply for the same house is-
(A) 7/9 (B) 8/9 (C) 1/9 (D) 2/9

18. 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 targert is hit by the second plane is :-
(A) 0.14 (B) 0.2 (C) 0.7 (D) 0.06

19. Four numbers are chosen at random (without replacement) from the set (1, 2, 3, ..., 20).
Statement–1 : The probability that the chosen numbers when arranged in some order will form an AP is
Statement–2 : In the four chosen numbers form an AP, then the set of all possible values of common difference is $\{\pm1, \pm2, \pm3, \pm4, \pm5\}$.

(A) Statement–1 is true, Statement–2 is true; Statement–2 is a correct explanation for Statement–1.
(B) Statement–1 is true, Statement–2 is true; Statement–2 is not a correct explanation for statement–1.
(C) Statement–1 is true, Statement–2 is false.
(D) Statement–1 is false, Statement–2 is true.

20. If all the words (with or without meaning) having five letters, formed using the letters of the word SMALL and arranged as in a dictionary ; then the position of the word SMALL is :

(A) 59^{th} (B) 52^{nd} (C) 58^{th} (D) 46^{th}