Multiple Choice Questions

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1. Which of the following cannot be the probability of an event?

   (a) 0.7
   (b) $\frac{2}{3}$
   (c) -1.5
   (d) 15%

2. If the probability of an event is p, then the probability of its complementary event will be

   (a) $p - 1$
   (b) p
   (c) $1 - p$
   (d) $1 - \frac{1}{p}$

3. Out of one-digit prime numbers, one number is selected at random. The probability of selecting an even number is

   (a) $\frac{1}{2}$
   (b) $\frac{1}{4}$
   (c) $\frac{4}{9}$
   (d) $\frac{2}{5}$

4. When a die is thrown, the probability of getting an odd number less than 3 is

   (a) $\frac{1}{2}$
   (b) $\frac{1}{3}$
   (c) $\frac{1}{6}$
   (d) 0

5. A fair die is thrown once. The probability of getting an even prime number is

   (a) $\frac{1}{6}$
   (b) $\frac{2}{3}$
   (c) $\frac{1}{3}$
   (d) $\frac{1}{2}$

6. A fair die is thrown once. The probability of getting a composite number is

   (a) $\frac{1}{3}$
   (b) $\frac{1}{6}$
   (c) $\frac{2}{3}$
   (d) 0

7. If a fair die is rolled once, then the probability of getting an even number or a number greater than 4 is

   (a) $\frac{1}{2}$
   (b) $\frac{1}{3}$
   (c) $\frac{5}{6}$
   (d) $\frac{2}{3}$

8. If a letter is chosen at random from the letters of the English alphabet, then the probability that it is a letter of the word **DELHI** is

   (a) $\frac{1}{5}$
   (b) $\frac{1}{26}$
   (c) $\frac{5}{26}$
   (d) $\frac{21}{26}$

9. A card is selected at random from a pack of 52 cards. The probability of its being a red face card is

   (a) $\frac{3}{26}$
   (b) $\frac{3}{13}$
   (c) $\frac{2}{13}$
   (d) $\frac{1}{2}$

10. If a card is drawn from a well-shuffled pack of 52 playing cards, then the probability of this card being a king or a jack is

    (a) $\frac{1}{26}$
    (b) $\frac{1}{13}$
    (c) $\frac{2}{13}$
    (d) $\frac{1}{4}$

11. The probability that a non-leap year selected at random has 53 Sundays is

    (a) $\frac{1}{365}$
    (b) $\frac{2}{365}$
    (c) $\frac{2}{7}$
    (d) $\frac{1}{7}$

12. A bag contains 3 red balls, 5 white balls, and 7 black balls. The probability that a ball drawn from the bag at random will be neither red nor black is

    (a) $\frac{1}{5}$
    (b) $\frac{1}{3}$
    (c) $\frac{7}{15}$
    (d) $\frac{8}{15}$

13. A bag contains 4 red balls and 5 green balls. One ball is drawn at random from the bag. The probability of getting either a red ball or a green ball is

    (a) $\frac{4}{9}$
    (b) $\frac{5}{9}$
    (c) 0
    (d) 1

14. One ticket is drawn at random from a bag containing tickets numbered 1 to 40. The probability that the selected ticket has a number which is a multiple of 5 is

    (a) $\frac{1}{5}$
    (b) $\frac{3}{5}$
    (c) $\frac{4}{5}$
    (d) $\frac{1}{3}$

15. If a number is randomly chosen from the numbers 1, 2, 3, 4, ..., 25, then the probability of the number to be prime is

    (a) $\frac{7}{25}$
    (b) $\frac{9}{25}$
    (c) $\frac{11}{25}$
    (d) $\frac{13}{25}$

16. A box contains 90 cards numbered 1 to 90. If one card is drawn from the box at random, then the probability that the number on the card is a perfect square is

    (a) $\frac{1}{10}$
    (b) $\frac{9}{100}$
    (c) $\frac{1}{9}$
    (d) $\frac{3}{100}$

17. If a (fair) coin is tossed twice, then the probability of getting two heads is

    (a) $\frac{1}{4}$
    (b) $\frac{1}{2}$
    (c) $\frac{3}{4}$
    (d) 0

18. If two coins are tossed simultaneously, then the probability of getting at least one head is

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

19. Lakshmi tosses two coins simultaneously. The probability that she gets at most one head is

    (a) 1
    (b) $\frac{3}{4}$
    (c) $\frac{1}{2}$
    (d) $\frac{1}{7}$

20. The probability of getting a bad egg in a lot of 400 eggs is 0.035. The number of bad eggs in the lot is

    (a) 7
    (b) 14
    (c) 20
    (d) 21

Section B

1. In a single throw of a die, find the probability of getting:

1. a number greater than 5
2. an odd prime number
3. a number which is a multiple of 3 or 4

2. A lot consists of 48 mobile phones of which 42 are good, 3 have only minor defects, and 3 have major defects. Varnika will buy a phone if it is good, but the trader will only buy a mobile if it has no major defect. One phone is selected at random from the lot. What is the probability that it is:

1. acceptable to Varnika?
2. acceptable to the trader?

3. A bag contains 5 red, 8 white, and 7 black balls. A ball is drawn from the bag at random. Find the probability that the drawn ball is:

1. red or white
2. not black
3. neither white nor black

4. A bag contains 5 white balls, 7 red balls, 4 black balls, and 2 blue balls. One ball is drawn at random from the bag. What is the probability that the ball drawn is:

1. white or blue
2. red or black
3. neither white nor black

5. A box contains 20 balls bearing numbers 1, 2, 3, . . . , 20. A ball is drawn at random from the box. What is the probability that the number on the ball is:

1. an odd number
2. divisible by 2 or 3
3. not divisible by 10

6. Find the probability that a number selected at random from the numbers 1, 2, 3, . . . , 35 is:

1. a prime number
2. a multiple of 7
3. a multiple of 3 or 5

7. Cards marked with numbers 13, 14, 15, . . . , 60 are placed in a box and mixed thoroughly. One card is drawn at random from the box. Find the probability that the number on the card is:

1. divisible by 5
2. a number which is a perfect square

8. A box has cards numbered 14 to 99. Cards are mixed thoroughly and a card is drawn at random from the box. Find the probability that the card drawn from the box has:

1. an odd number
2. a perfect square number

9. A bag contains 5 red balls and some blue balls. If the probability of drawing a blue ball is four times that of a red ball, find the number of balls in the bag.

10. A bag contains 18 balls out of which x balls are white.

1. If one ball is drawn at random from the bag, what is the probability that it is a white ball?
2. If 2 more white balls are put in the bag, the probability of drawing a white ball will be $\frac{9}{8}$ times that of the probability of drawing a white ball in part (i). Find the value of x.

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