

Name of the Student:

Roll No:

Department:

Class:

**EMPLOYABILITY TEST 7**

**I. Choose the correct alternative:**

1. The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, then the value of x is:

- a.15                      b.16                      c.18                      d.25                      [       ]

2. Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5?

- a.  $\frac{1}{2}$                       b.  $\frac{2}{5}$                       c.  $\frac{8}{15}$                       d.  $\frac{9}{20}$                       [       ]

3. In a box, there are 8 red, 7 blue and 6 green balls. One ball is picked up randomly. What is the probability that it is neither red nor green?

- a.  $\frac{1}{3}$                       b.  $\frac{2}{3}$                       c.  $\frac{3}{5}$                       d.  $\frac{5}{3}$                       [       ]

4. What is the probability of getting a sum 9 from two throws of a dice?

- a.  $\frac{1}{6}$                       b.  $\frac{1}{8}$                       c.  $\frac{1}{9}$                       d.  $\frac{1}{12}$                       [       ]

5. Three unbiased coins are tossed. What is the probability of getting at most two heads?

- a.  $\frac{3}{4}$                       b.  $\frac{4}{3}$                       c.  $\frac{1}{4}$                       d.  $\frac{7}{8}$                       [       ]

6. Two dice are thrown simultaneously. What is the probability of getting two numbers whose product is even?

- a.  $\frac{1}{2}$                       b.  $\frac{3}{4}$                       c.  $\frac{3}{8}$                       d.  $\frac{8}{3}$                       [       ]

7. In a lottery, there are 10 prizes and 25 blanks. A lottery is drawn at random. What is the probability of getting a prize?

- a.  $\frac{1}{10}$                       b.  $\frac{2}{7}$                       c.  $\frac{2}{5}$                       d.  $\frac{5}{7}$                       [       ]

8. Two dice are tossed. The probability that the total score is a prime number is:

- a.  $\frac{1}{6}$                       b.  $\frac{5}{12}$                       c.  $\frac{1}{2}$                       d.  $\frac{7}{9}$                       [       ]

9. A card is drawn from a pack of 52 cards. The probability of getting a queen of club or a king of heart is:

- a.  $\frac{1}{13}$                       b.  $\frac{2}{13}$                       c.  $\frac{1}{26}$                       d.  $\frac{1}{52}$                       [       ]

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**10.** One card is drawn at random from a pack of 52 cards. What is the probability that the card drawn is a face card (Jack, Queen and King only)?

- a.  $\frac{1}{13}$                       b.  $\frac{3}{13}$                       c.  $\frac{4}{13}$                       d.  $\frac{9}{52}$                       [      ]

**11.** A bag contains 6 black and 8 white balls. One ball is drawn at random. What is the probability that the ball drawn is white?

- a.  $\frac{3}{4}$                       b.  $\frac{4}{7}$                       c.  $\frac{1}{8}$                       d.  $\frac{3}{7}$                       [      ]

**12.** The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, then the value of x is:

- a. 15                      b. 16                      c. 18                      d. 25                      [      ]

**13.** A vendor bought toffees at 6 for a rupee. How many for a rupee must he sell to gain 20%?

- a. 3                      b. 4                      c. 5                      d. 6                      [      ]

**14.** Sam purchased 20 dozens of toys at the rate of Rs. 375 per dozen. He sold each one of them at the rate of Rs. 33. What was his percentage profit?

- a. 3.5                      b. 4.5                      c. 5.6                      d. 6.5                      [      ]

**15.** On selling 17 balls at Rs. 720, there is a loss equal to the cost price of 5 balls. The cost price of a ball is:

- a. 45                      b. 50                      c. 55                      d. 60                      [      ]

**TRUE/FALSE**

**16.** The price, at which an article is purchased, is called its **cost price**, abbreviated as **C.P.**                      [      ]

**17.** The price, at which an article is sold, is called its **selling prices**, abbreviated as **S.P.**                      [      ]

**18.** Any subset of a sample space is called an **event**.                      [      ]

**19.** If a pipe can fill a tank in x hours, then: part filled in 1 hour =  $\frac{1}{X}$                       [      ]

**20.** If a pipe can fill a tank in x hours and another pipe can empty the full tank in y hours (where x > y), then on opening both the pipes, then the net part emptied in 1 hour =  $(\frac{1}{Y} - \frac{1}{X})$ .                      [      ]

**ET 7\_Evaluators**

**1.Explanation:**

Let C.P. of each article be Re. 1 C.P. of  $x$  articles = Rs.  $x$ .

S.P. of  $x$  articles = Rs. 20.

Profit = Rs.  $(20 - x)$ .

$$\therefore \left( \frac{20 - x}{x} \times 100 = 25 \right)$$

$$\Rightarrow 2000 - 100x = 25x$$

$$125x = 2000$$

$$\Rightarrow x = 16.$$

**2. Explanation:**

Here,  $S = \{1, 2, 3, 4, \dots, 19, 20\}$ .

Let  $E =$  event of getting a multiple of 3 or 5 =  $\{3, 6, 9, 12, 15, 18, 5, 10, 20\}$ .

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{9}{20}.$$

**3. Explanation:**

Total number of balls =  $(8 + 7 + 6) = 21$ .

Let  $E =$  event that the ball drawn is neither red nor green

= event that the ball drawn is blue.

$$\therefore n(E) = 7.$$

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{7}{21} = \frac{1}{3}.$$

**4. Explanation:**

In two throws of a dice,  $n(S) = (6 \times 6) = 36$ .

Let  $E =$  event of getting a sum =  $\{(3, 6), (4, 5), (5, 4), (6, 3)\}$ .

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{4}{36} = \frac{1}{9}.$$

**5. Explanation:**

Here  $S = \{TTT, TTH, THT, HTT, THH, HTH, HHT, HHH\}$

Let  $E =$  event of getting at most two heads.

Then  $E = \{TTT, TTH, THT, HTT, THH, HTH, HHT\}$ .

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{7}{8}.$$

**6. Explanation:**

In a simultaneous throw of two dice, we have  $n(S) = (6 \times 6) = 36$ .

Then,  $E = \{(1, 2), (1, 4), (1, 6), (2, 1), (2, 2), (2, 3), (2, 4), (2, 5), (2, 6), (3, 2), (3, 4), (3, 6), (4, 1), (4, 2), (4, 3), (4, 4), (4, 5), (4, 6), (5, 2), (5, 4), (5, 6), (6, 1), (6, 2), (6, 3), (6, 4), (6, 5), (6, 6)\}$

$$\therefore n(E) = 27.$$

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{27}{36} = \frac{3}{4}.$$

**7. Explanation:**

$$P(\text{getting a prize}) = \frac{10}{(10 + 25)} = \frac{10}{35} = \frac{2}{7}.$$

**8. Explanation:**

Clearly,  $n(S) = (6 \times 6) = 36$ .

Let  $E =$  Event that the sum is a prime number.

Then  $E = \{(1, 1), (1, 2), (1, 4), (1, 6), (2, 1), (2, 3), (2, 5), (3, 2), (3, 4), (4, 1), (4, 3), (5, 2), (5, 6), (6, 1), (6, 5)\}$

$$\therefore n(E) = 15.$$

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{15}{36} = \frac{5}{12}.$$

**9. Explanation:**

Here,  $n(S) = 52$ .

Let E = event of getting a queen of club or a king of heart.

Then,  $n(E) = 2$ .

$$\therefore P(E) = \frac{n(E)}{n(S)} = \frac{2}{52} = \frac{1}{26}$$

**10. Explanation:**

Clearly, there are 52 cards, out of which there are 12 face cards.

$$\therefore P(\text{getting a face card}) = \frac{12}{52} = \frac{3}{13}$$

**11. Explanation:**

Let number of balls =  $(6 + 8) = 14$ .

Number of white balls = 8.

$$P(\text{drawing a white ball}) = \frac{8}{14} = \frac{4}{7}$$

**12. Explanation:**

Let C.P. of each article be Re. 1 C.P. of  $x$  articles = Rs.  $x$ .

S.P. of  $x$  articles = Rs. 20.

Profit = Rs.  $(20 - x)$ .

$$\therefore \left( \frac{20 - x}{x} \times 100 = 25 \right)$$

$$\Rightarrow 2000 - 100x = 25x$$

$$125x = 2000$$

$$\Rightarrow x = 16.$$

**13. Explanation:**

C.P. of 6 toffees = Re. 1

$$\text{S.P. of 6 toffees} = 120\% \text{ of Re. 1} = \text{Rs. } \frac{6}{5}$$

For Rs.  $\frac{6}{5}$ , toffees sold = 6.

For Re. 1, toffees sold =  $\left(6 \times \frac{5}{6}\right) = 5$ .

**14. Explanation:**

Cost Price of 1 toy = Rs.  $\left(\frac{375}{12}\right) = \text{Rs. } 31.25$

Selling Price of 1 toy = Rs. 33

So, Gain = Rs.  $(33 - 31.25) = \text{Rs. } 1.75$

$\therefore$  Profit % =  $\left(\frac{1.75}{31.25} \times 100\right)\% = \frac{28}{5}\% = 5.6\%$

**15. Explanation:**

(C.P. of 17 balls) - (S.P. of 17 balls) = (C.P. of 5 balls)

$\Rightarrow$  C.P. of 12 balls = S.P. of 17 balls = Rs.720.

$\Rightarrow$  C.P. of 1 ball = Rs.  $\left(\frac{720}{12}\right) = \text{Rs. } 60$ .

**16. Explanation: T**

**17. Explanation: T**

**18. Explanation: T**

**19. Explanation: T**

**20. Explanation: T**