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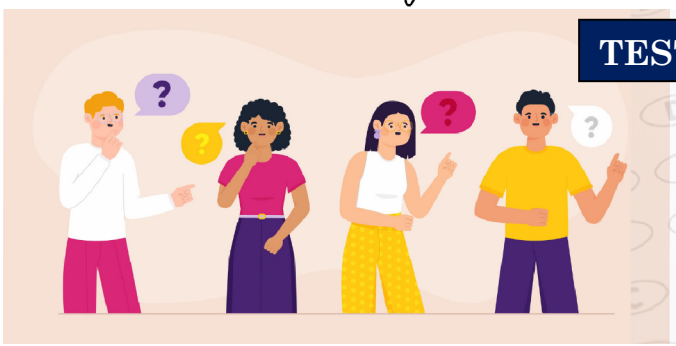

TEST-14

MULTIPLE CHOICE TYPE QUESTIONS

For 2025 Exams - Mathematics (041) - Class 11

☑ ***Select the correct option in the followings. Each question carries 1 mark.***

01. A die is rolled once. Let A be the event that the die shows 6 and B be the event that the die shows an even number, then

(a) $A \cap B = \phi$ (b) $A \cup B = \phi$ (c) $A \cap B \neq \phi$ (d) $\bar{A} = \{1, 3, 5\}$

02. If $P(A \cup B) = \frac{1}{2}$ and $P(\bar{A}) = \frac{2}{3}$, then the probability of $\bar{A} \cap B$

(a) is $\frac{1}{3}$ (b) is $\frac{1}{6}$ (c) is $\frac{5}{6}$ (d) is $\frac{1}{4}$

03. Seven persons are to be seated in a row. The probability that two particular persons sit next to each other is

(a) $\frac{1}{2}$ (b) $\frac{1}{9}$ (c) $\frac{2}{7}$ (d) $\frac{1}{3}$

04. 6 boys and 6 girls sit in a row at random. The probability that all the girls sit together is

(a) $\frac{1}{432}$ (b) $\frac{12}{431}$ (c) $\frac{1}{123}$ (d) $\frac{1}{132}$

05. Without repetition of the numbers, four digit numbers are formed with the numbers 0, 2, 4 and 5. The probability of such a number divisible by 5 is

(a) $\frac{4}{5}$ (b) $\frac{1}{30}$ (c) $\frac{1}{5}$ (d) $\frac{5}{9}$

06. A single letter is selected at random from the word 'PROBABILITY'. The probability that it is a vowel is

(a) $\frac{4}{11}$ (b) $\frac{7}{11}$ (c) $\frac{2}{11}$ (d) $\frac{3}{11}$

07. The probability that at least one of the events A and B occurs is 0.6.
If A and B occur simultaneously with probability 0.2, then $P(\bar{A}) + P(\bar{B})$ is

(a) 0.8 (b) 0.2 (c) 1.2 (d) 1.6

08. If X and Y are two events, the probability that at least one of them occurs is

(a) $P(X) + P(Y) - 2P(X \cap Y)$ (b) $P(X) + P(Y) - P(X \cap Y)$

(c) $P(X) + P(Y) + P(X \cap Y)$ (d) $P(X) + P(Y) + 2P(X \cap Y)$

09. The probability of happening of an event A is 0.5 and that of B is 0.3. If A and B are mutually exclusive events (i.e., disjoint events), then the probability of neither A nor B is

(a) 0.2 (b) 0.8 (c) 0.02 (d) None of these

10. Let A and B be two events such that $P(A) = 0.3$ and $P(A \cup B) = 0.8$.
If $P(A \cap B) = P(A) \times P(B)$, then P(B) is

(a) $\frac{2}{7}$ (b) $\frac{6}{7}$ (c) $\frac{1}{7}$ (d) $\frac{5}{7}$

11. A chartered accountant applied for a job in two firms X and Y. He estimated that the probability of him being selected in firm X is $\frac{7}{10}$ and being rejected in Y is $\frac{5}{10}$ and the probability that he will be selected in both the firms is $\frac{4}{10}$. The probability that he will be selected in at least one of the firms is

(a) $\frac{4}{5}$ (b) $\frac{1}{5}$ (c) $\frac{2}{5}$ (d) $\frac{3}{5}$

12. Three unbiased coins are tossed. The probability of getting at least 2 tails is found to be p. Then the value of $2p$ is

(a) 0 (b) 1 (c) 3 (d) 4

13. From 4 red balls, 2 white balls and 4 black balls, four balls are selected. Then the probability of getting 2 red balls is

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

14. An experiment consists of tossing a coin and then throwing it second time if a head occurs. If a tail occurs on the first toss, then a die is rolled once. Then the number of sample points in the sample space of this experiment is

(a) 0 (b) 8 (c) 3 (d) 4

15. A card is drawn from a pack of 52 playing cards. What is the probability of the drawn card to be a Queen?

(a) $\frac{1}{13}$ (b) $\frac{12}{13}$ (c) $\frac{3}{52}$ (d) $\frac{1}{52}$

16. A bag contains 6 white marbles, 2 red marbles and 3 blue marbles. The probability of drawing a non-white marble from the bag is given by

(a) $\frac{6}{11}$ (b) $\frac{1}{11}$ (c) $\frac{5}{11}$ (d) $\frac{10}{11}$

*Question numbers **17** to **20** are Assertion and Reason based questions. Two statements are given, one labelled **Assertion (A)** and the other labelled **Reason (R)**. Select the correct answer from the codes (a), (b), (c) and (d) as given below.*

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
(b) Both Assertion (A) and Reason (R) are true and Reason (R) is **not** the correct explanation of Assertion (A).
(c) Assertion (A) is true but Reason (R) is false.
(d) Assertion (A) is false but Reason (R) is true.

17. **Assertion (A) :** The probability that a person visiting a zoo will see tigers is 0.72, the probability that he will see the elephants is 0.84 and the probability that he will see both is 0.52.

Reason (R) : If A and B are two events associated with a random experiment such that $P(A) = 0.3$, $P(B) = 0.2$ and $P(A \cap B) = 0.1$, then the value of $P(A \cap \overline{B})$ is 0.2.

18. **Assertion (A) :** If a coin is tossed repeatedly until a tail comes up, then the sample space corresponding to this experiment is {T, HT, HHT, HHHT, HHHHT, …}.

Reason (R) : The probability of an impossible event is 0.

19. **Assertion (A) :** Let E be the event corresponding to a random experiment. Then $0 \le P(E) \le 1$.

Reason (R) : For mutually exclusive events E and F, we must have $E \cap F \neq \phi$.

20. **Assertion (A) :** The probability of drawing a king card of red colour from a pack of 52 playing card is $\frac{1}{26}$.

Reason (R) : Let E be an event associated with a random experiment. Then $P(E)+P(E')=1$.

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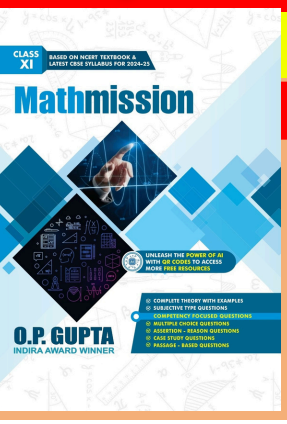

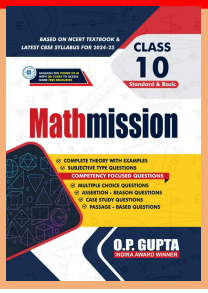

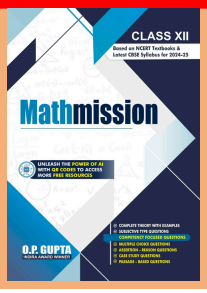

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