

Q.1) If A and B are two events such that $p(a) > 0$ and $p(b)$ is not a sure event, then $P(A/B) = ?$

- A) $1 - P(A/B)$
- B) $P((A')/ (B'))$
- C) $P((A)/ (B))$
- D) $1 - P(A \cup B)/P(B')$

Q.2) If A and B are two events, then the probability of exactly one of them occurs is given by _____

- A) $P(A \cap B') + P(A' \cap B)$
- B) $P(A) + P(B) - 2P(A)P(B)$
- C) $P(A)' + P(B)' - 2P(A)'P(B)'$
- D) $P(A) + P(B) - P(A \cap B)$

Q.3) The probability that at least one of the events M and N occur is 0.6. If M and N have probability of occurring together as 0.2, then $P(M') + P(N')$ is?

- A) 0.2
- B) 1.4
- C) 1.2
- D) 0.8

Q.4) A jar contains 'y' blue colored balls and 'x' red colored balls. Two balls are pulled from the jar without replacing. What is the probability that the first ball is blue and second one is red?

- A) $\frac{xy-y}{x^2+y^2+2xy-(x+y)}$
- B) $\frac{xy}{x^2+y^2+2xy-(x+y)}$
- C) $\frac{y^2-y}{x^2+y^2+2xy-(x+y)}$
- D) $\frac{xy-y}{x^2+y^2+2xy-(x-y)}$

Answer: B

Q.5) A survey determines that in a locality, 33% go to work by Bike, 42% go by Car, and 12% use both. The probability that a random person selected uses neither of them is?

A) 0.29

B) 0.39

C) 0.37

D) 0.28

Q.6) A coin is biased so that its chances of landing Head is $\frac{2}{3}$. If the coin is flipped 3 times, the probability that the first 2 flips are heads and the 3rd flip is a tail is?

A) $\frac{4}{27}$

B) $\frac{5}{27}$

C) $\frac{6}{27}$

D) $\frac{7}{27}$

Q.7) Husband and wife apply for two vacant spots in a company. If the probability of wife getting selected and husband getting selected are $\frac{3}{7}$ and $\frac{2}{3}$ respectively, what is the probability that neither of them will be selected?

A) $\frac{1}{21}$

B) $\frac{2}{21}$

C) $\frac{4}{21}$

D) $\frac{5}{21}$

Q.8) For two events A and B, if $P(B') = 0.5$ and $P(A \cup B) = 0.5$, then $P(A'|B') = ?$

A) 0.5

B) 1

C) 1.2

D) 0.8

Q.9) A fair coin is tossed thrice, what is the probability of getting all 3 same outcomes?

A) $\frac{3}{4}$

B) $\frac{1}{4}$

C) $\frac{5}{4}$

D) $\frac{7}{4}$

Q.10) A and B are two events such that $P(A') = 0.4$ and $P(A \cap B) = 0.2$ Then $P(A \cap B')$ is equal to _____

A) 0.2

B) 0.4

C) 0.6

D) 0.8

Q.11) A problem in mathematics is given to three students A, B and C. If the probability of A solving the problem is $\frac{1}{2}$ and B not solving it is $\frac{1}{4}$. The whole probability of the problem being solved is $\frac{63}{64}$ then what is the probability of solving it?

A) $\frac{3}{8}$

B) $\frac{1}{8}$

C) $\frac{5}{8}$

D) $\frac{7}{8}$

Q.12) Let A and B be two events such that $P(A) = \frac{1}{5}$ While $P(A \text{ or } B) = \frac{1}{2}$. Let $P(B) = P$. For what values of P are A and B independent?

A) $\frac{3}{8}$

B) $\frac{1}{8}$

C) $\frac{5}{8}$

D) $\frac{7}{8}$

Q.13) If A and B are two mutually exclusive events with $P(\sim A) = \frac{5}{6}$ and $P(b) = \frac{1}{3}$ then $P(A / \sim B)$ is equal to _____.

A) $\frac{3}{4}$

B) $\frac{1}{4}$

C) $\frac{5}{4}$

D) $\frac{7}{4}$

Q.14) If A and B are two events such that $P(a) = 0.2$, $P(b) = 0.6$ and $P(A / B) = 0.2$ then the value of $P(A / \sim B)$ is _____.

A) 0.2

B) 0.4

C) 0.6

D) 0.8

Q.15) Let A and B be two events such that the occurrence of A implies occurrence of B, But not vice-versa, then the correct relation between $P(a)$ and $P(b)$ is _____.

A) $P(A) < P(B)$

B) $P(B) \geq P(A)$

C) $P(A) = P(B)$

D) $P(A) \geq P(B)$

Q.16) If $A \subset B$ and $B \subset A$ then,_____.

- A) $P(A) < P(B)$
- B) $P(B) \geq P(A)$
- C) $P(A) = P(B)$
- D) $P(A) \geq P(B)$

Q.17) If $A \subset B$ then_____.

- A) $P(A) < P(B)$
- B) $P(B') \geq P(A')$
- C) $P(A) = P(B)$
- D) $P(A') \geq P(B')$

Q.18) If A is a perfect subset of B and $P(a < P_b)$, then $P(B - A)$ is equal to _____.

- A) $P(A) - P(B)$
- B) $P(B') - P(A')$
- C) $P(B) - P(A)$
- D) $P(A') - P(B')$

Q.19) What is the probability of an impossible event?

- A) 0
- B) 1
- C) Not defined
- D) Insufficient data

Q.20) If $A = A_1 \cup A_2 \dots \dots \cup A_n$, where $A_1 \dots A_n$ are mutually exclusive events then_____.

- A) $\sum_{i=0}^n P(A_i)$
- B) $\sum_{i=0}^{\infty} P(A_i)$
- C) $\sum_{i=1}^n P(A_i)$
- D) $\sum_{i=1}^{\infty} P(A_i)$

Q.21) If 40% of boys opted for maths and 60% of girls opted for maths, then what is the probability that maths is chosen if half of the class's population is girls?

- A) 0.5
- B) 0.6
- C) 0.4
- D) 0.7

Q.22) Company A produces 10% defective products, Company B produces 20% defective products and C produces 5% defective products. If choosing a company is an equally likely event, then find the probability that the product chosen is defective.

- A) 0.22
- B) 0.12
- C) 0.11
- D) 0.21

Q.23) Suppose 5 men out of 100 men and 10 women out of 250 women are colour blind, then find the total probability of colour blind people. (Assume that both men and women are in equal numbers.)

- A) 0.45
- B) 0.045
- C) 0.05
- D) 0.5

Q.24) A problem is given to 5 students P, Q, R, S, T. If the probability of solving the problem individually is $\frac{1}{2}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{5}$, $\frac{1}{6}$ respectively, then find the probability that the problem is solved.

- A) 0.47
- B) 0.27
- C) 0.57
- D) 0.37

Q.25) In a badminton practice session, the probability that the player A serves properly is 0.8 and that the player B serves properly is 0.9. If there are only two players, then find the probability that it is served properly.

- A) 0.75
- B) 0.55
- C) 0.85
- D) 0.95

Q.26) The probability that person A completes all the tasks assigned is 50% and that of person B is 20%. Find the probability that all the tasks are completed.

- A) 0.15
- B) 0.25
- C) 0.35
- D) 0.45

Q.27) Let there be two newly launched phones A and B. The probability that phone A has good battery life is 0.7 and the probability that phone B has good battery life is 0.8. Then find the probability that a phone has a good battery life.

- A) 0.65
- B) 0.75
- C) 0.85
- D) 0.45

Q.28) An urn B_1 contains 2 white and 3 black chips and another urn B_2 contains 3 white and 4 black chips. One urn is selected at random and a chip is drawn from it. If the chip drawn is found black, find the probability that the urn chosen was B_1 .

- a) $\frac{4}{7}$
- b) $\frac{3}{7}$
- c) $\frac{20}{41}$
- d) $\frac{21}{41}$

Q.29) At a certain university, 4% of men are over 6 feet tall and 1% of women are over 6 feet tall. The total student population is divided in the ratio 3:2 in favour of women. If a student is selected at random from among all those over six feet tall, what is the probability that the student is a woman?

- A) $\frac{2}{5}$
- B) $\frac{3}{5}$
- C) $\frac{3}{11}$
- D) $\frac{1}{100}$

Q.30) suppose box A contains 4 red and 5 blue coins and box B contains 6 red and 3 blue coins. A coin is chosen at random from the box A and placed in box B. Finally, a coin is chosen at random from among those now in box B. What is the probability a blue coin was transferred from box A to box B given that the coin chosen from box B is red?

- a) $\frac{15}{29}$
- b) $\frac{14}{29}$
- c) $\frac{1}{2}$
- d) $\frac{7}{10}$