Q1.

Two fair dice are thrown once. Let event A denote odd face on first die, event B denotes odd face on second dice and event C denotes that sum of numbers on top faces is odd.

(a) $P(A \cap C) = 0.5$
(b) $P(C) = 0.5$
(c) A, B and C are independent events
(d) $P(A) = 0.25$

- A
- B
- C
- D

Q2.

If $P(A) = 0.35, P(B) = 0.75$ and $P(AUB) = 0.95$ then $P(A^c \cup B^c) =$

(a) 0.35
(b) 0.20
(c) 0.05
(d) 0.85

- A
- B
- C
- D

Q3.

If probability mass function of random variable X is given by $P(X = 1) = 0.4, P(X = 2) = 0.3, P(X = 3) = 0.2, P(X = 4) = 0.1$, then probability $P(0.5 < X < 3.5 \mid X > 1)$ is equal to

(a) 7/8
(b) 3/7
(c) 5/6
(d) 2/7

- A
- B
- C
- D

Q4.

If probability density function of a random variable X is given by $f_X(x) =$

$0.25, \ -2 < x < 2$; then probability $P(|X| > 1)$ is given by

(a) 0.50
(b) 0.22
(c) 0.36
(d) 0.15

A
B
C
D

Q5.

If probability density function of a random variable X is given by $f_X(x) = bxe^{-x}, \ 0 < x < \infty$; then value of constant b is given by

(a) 1.5
(b) 1.0
(c) 2.5
(d) 0.45

A
B
C
D

Q6.

If probability density function of a random variable X is given by $f_X(x) = 0.5x, \ 0 < x < 2$; then probability $P(X > 1.5 \mid X > 1)$ is given by

(a) 7/12
(b) 2/9
(c) 3/8
(d) 1/6

A
B
C
D

Q7.

Probability mass function of a random variable X is given by $P(X = 15) = 7/44, P(X = 20) = 21/44, P(X = 25) = 7/22, P(X = 30) = 1/22$ then expectation $E((2/17)X - 3)$ is equal to

(a) 0.50
(b) -1
(c) 1.2
(d) -0.5

A
B
C
D

Q8.

If probability density function of a random variable X is given by $f_X(x) = d(x - x^2), \ 0 < x < 1$; then first evaluate the constant d. Now expectation $E(2X + 1)$ is given by

(a) 3
(b) 2
(c) 1
(d) 6

A
B
C
D

Q9.

Probability mass function of a random variable X is given by $P(X = x) = (1/2)^x, \quad x = 1, 2, 3, \ldots$. Then expectation $E(X^2)$ is given by

(a) 8
(b) 2
(c) 6
(d) 4

A
B
C
D

Q10.

If probability density function of a random variable X is given by $f_X(x) = 6x(1 - x), \ 0 < x < 1$; then value of c satisfying the probability $P(X < c) = P(X > c)$ is given by

(a) 0.20
(b) 0.70
(c) 0.4
(d) 0.5

A
B
C
D