Started on	Sunday, 7 April 2024, 4:20 PM
State	Finished
Completed on	Sunday, 7 April 2024, 4:48 PM
Time taken	27 mins 23 secs
Grade	20.00 out of 20.00 (100%)

Question 1

Correct

Mark 2.00 out of 2.00

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. 1/6
- d. 3/8

The correct answer is: 7/12

Question 2

Correct

Mark 2.00 out of 2.00

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

- a. 0.85 ✓
- b. 0.05
- c. 0.20
- d. 0.35

The correct answer is: 0.85

Question 3

Correct

Mark 2.00 out of 2.00

The probability that a student passes a Physiscs test is $2/3$ and the probability that he passes both a Physiscs test and an English test is $14/45$. The probability that he passes at least one test is $4/5$. What is the probability that he passes the English test?

a. 14/15

b. 4/9 ✓

c. 7/15

d. 5/4

The correct answer is: 4/9

Question 4

Correct

Mark 2.00 out of 2.00

If X is a Poisson random variable such that $P(X = 2) = 9P(X = 4) + 90P(X = 6)$. Find the variance of X.

a. 2.5

b. 2.0

c. 1.7

d. 1.0 ✓

The correct answer is: 1.0

Question 5

Correct

Mark 2.00 out of 2.00

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. -1.0

b. 0.50

c. -0.5 ✓

d. 1.2

The correct answer is: -0.5

Question 6

Correct

Mark 2.00 out of 2.00

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. 0.22

b. 0.50 ✓

c. 0.15

d. 0.36

The correct answer is: 0.50

Question 7

Correct

Mark 2.00 out of 2.00

A card is drawn from a pack of 52 cards. Find the probability of getting a king or a heart or a red card.

a. 1/4

b. 11/13

c. 7/13 ✓

d. 3/4

The correct answer is: 7/13

Question 8

Correct

Mark 2.00 out of 2.00

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. 3/7

b. 7/8

c. 2/7

d. 5/6 ✓

The correct answer is: 5/6

Question 9

Correct

Mark 2.00 out of 2.00

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. $P(C) = 0.5$ ✓

b. $P(A \cap C) = 0.5$

c. $P(A) = 0.25$

d. A, B and C are independent events

The correct answer is: $P(C) = 0.5$

Question 10

Correct

Mark 2.00 out of 2.00

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

a. 2.5

b. 1.0 ✓

c. 0.45

d. 1.5

The correct answer is: 1.0