

QUIZ I - CSE IV SEM MAT 2256- SECTION B

ENGINEERING MATHEMATICS IV

1

A random variable X has the distribution given by $P(X=0)=P(X=2)=p$ and $P(X=1)=1-2p$, for $0 \leq p \leq 1/2$. The value of p for which the $\text{Var}(X)$ is maximum is _____.

(1 Point)

- ☐ 0
- ☒ 1/2
- ☐ 1/3
- ☐ 1

2

A letter is known to have come either from TATANAGAR or from CALCUTTA or from KARNATAKA. On the envelope just two consecutive letters TA are visible. What is the probability that the letter came from CALCUTTA?

(1 Point)

- ☐ 1/3
- ☐ 14/29

☒ 8/29

☐ 7/29

3

The kms X (in thousands of kms) which car owners get with a certain kind of tyre is a random variable with the following probability density function $f(x)$. The probability that one of these tyres will last at most 10000kms is_____.

(1 Point)

$$f(x) = \frac{1}{20} e^{-\frac{x}{20}}, x \geq 0$$

☐ 0

☒ 0.3935

☐ 0.6065

☐ 1

4

A number is chosen at random among the first 120 natural numbers. The probability of the number chosen being a multiple of 5 or 15 is _____
(1 Point)

☐ 1/8

☒ 1/5

☐ 1/16

☐ 1/9

5

The value of p is _____.

(1 Point)

$$P(A \cap B) = \frac{1}{2}, P(\bar{A} \cap \bar{B}) = \frac{1}{2}, 2P(A) = P(B)$$

☐ 1/4

☐ 1/2

☐ 1/3

☒ 2/3

6

In the simultaneous tossing of two fair coins the probability of having at least one head is _____

(1 Point)

☐ 1/2

☐ 1/4

☒ 3/4

☐ 1

7

If A and B are two independent events with following probabilities, then the value of k is _____

(1 Point)

$$P(\bar{A}) = 0.7, P(\bar{B}) = k \text{ \& } P(A \cup B)$$

☐ 5/7

☐ 1

☒ 2/7

☐ 1/7

8

Die A has two red and four white faces whereas die B has two white and four red faces. A coin is flipped once. If it falls heads the game continues by throwing die A, if it falls tails die B is to be used. If the first two throws resulted in red faces, then the probability of red face at the third throw is

_____.

(1 Point)

☒ 3/5

☐ 1/3

☐ 1/2

☐ 2/3

9

A man has tossed 2 fair dice. The conditional probability that he has tossed 2 sixes given that he has tossed at least once 6 is _____

(1 Point)

☒ 1/11

☐ 1/6

☐ 3/12

☐ 1/12

10

The mathematical expectation of the number on a die when thrown is

_____.
(1 Point)

☐ 2

☐ 3/6

☒ 7/2

☐ 3

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