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Started on Monday, 8 November 2021, 8:30 AM

State Finished

Completed on Monday, 8 November 2021, 8:59 AM

Time taken 29 mins 32 secs

Marks 22.00/26.00

Grade 8.46 out of 10.00 (85%)

Question **1**

Correct

Mark 1.00 out of 1.00

I certify that during the entire duration of the Midterm I will not:

- consult anyone or any resource (book, online notes, videos or internet search)
- run any code in the midterm on R to check

Select one:

- ☒ True ✓
- ☐ False

Thank you for being honest and your Midterm will be graded

The correct answer is 'True'.

Question 2

Correct

Mark 9.00 out of 9.00

Abhiti and Daughters Pvt. Ltd. produces resistors and markets them as 10--ohm resistors. However the actual ohms of resistance produced by the resistors may vary. Research has established that 10 % of the values are below 9.5 ohms and 20% are above 10.5 ohms. Two resistors, randomly selected, are used in a system.

Probability that both resistors have actual values between 9.5 and 10.5 ohms is

✓ . (Give your answer rounded up to two decimal digits.)

Probability that at least one resistor has an actual value in excess of 10.5 ohms is

✓ . (Give your answer rounded up to two decimal digits.)

Probability that none of the resistor has an actual value in excess of 10.5 ohms is

✓ . (Give your answer rounded up to two decimal digits.)

Question 3

Partially correct

Mark 12.00 out of 16.00

The duration of a video game is a random variable with an Exponential distribution with mean 10 minutes. Suppose that when you enter a video arcade two players are playing the game (independently). Let D be duration of the game.

The value of $P(D \geq 20)$ is

✓ . (Give your answer rounded up to four decimal digits.)

The value of a such that $P(D \geq 75 \mid D \geq 55) = P(D \geq a)$ is

✓ .

Probability exactly one of the two is still playing 20 minutes is

✓ .

Probability that at least one of them is still playing 20 minutes later is

✗ .

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