

Started on	Sunday, 18 September 2022, 9:02 PM
State	Finished
Completed on	Sunday, 18 September 2022, 9:03 PM
Time taken	1 min 12 secs
Marks	3.00/15.00
Grade	2.00 out of 10.00 (20%)

Question 1

Incorrect

Mark 0.00 out of 1.00

A student buys 1000 integrated circuits (ICs) from supplier A, 2000 ICs from supplier B and 3000 ICs from supplier C. He tested the ICs and found that the conditional probability of an IC being defective depends on the supplier from it was bought. Specifically, given that an IC came supplier A, the probability that it is defective is 0.05; given that an IC came supplier B, the probability that it is defective is 0.15; given that an IC came supplier C, the probability that it is defective is 0.20. If ICs from the three supplier are mixed together and one is selected at random, what is the probability that it is defective?

- ☒ a. 0.06635
- ☐ b. 0.1583
- ☐ c. None of the other choices is correct
- ☐ d. 0.08721
- ☐ e. 0.09167



Your answer is incorrect.

The correct answer is:
0.1583

Question **2**

Correct

Mark 1.00 out of 1.00

Each message in a digital communication system is classified as to whether it is received within the time specified by the system design. If four messages are classified, how many possible outcome does the sample space have?

- ☐ a. 8
- ☐ b. 4
- ☒ c. 16
- ☐ d. 32
- ☐ e. None of the above



Your answer is correct.

The correct answer is:
16

Question 3

Incorrect

Mark 0.00 out of 1.00

A batch contains 52 bacteria cells. Assume that 13 of cells are not good. Five cells are selected at random, without replacement. What is the probability that exactly 3 cells of selected cells are not good?

- ☐ a. 0.08154
- ☐ b. 0.25156
- ☐ c. None of them
- ☒ d. 0.27428
- ☐ e. 0.49524



Your answer is incorrect.

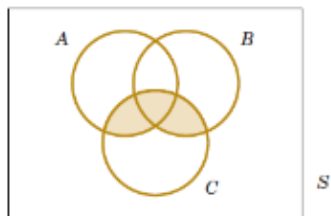
The correct answer is:
0.08154

Question 4

Correct

Mark 1.00 out of 1.00

Three events are shown on the Venn diagram in the figure below.



What is the best expression for the shaded region?

- ☐ a. None of them
- ☐ b. (A and B) or (not C)
- ☐ c. A and (not C)
- ☐ d. (C and A) and (C and B)
- ☒ e. C and (A or B)



Your answer is correct.

The correct answer is:
C and (A or B)

Question 5

Incorrect

Mark 0.00 out of 1.00

Suppose you and a friend each choose at random an integer between 1 and 8, where your number is written first and your friend's number second. Which the following statement is TRUE ?

- ☐ a. $P(\text{sum of the two numbers picked is } < 4) = 3/64$
- ☒ b. $P(\text{you pick 5 and your friend picks 8}) = 1/64$
- ☐ c. All of the others.
- ☐ d. $P(\text{both numbers match}) = 8/64$



Your answer is incorrect.

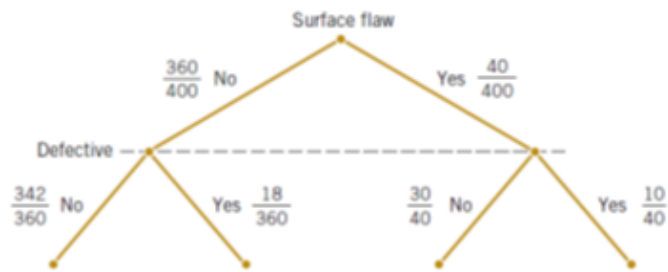
The correct answer is:
All of the others.

Question 6

Incorrect

Mark 0.00 out of 1.00

Given that the tree diagram with detail probabilities assigned below:



What is the probability of a randomly selected part being defective?

- ☐ a. None of them
- ☐ b. 372/400
- ☒ c. 108/360
- ☐ d. 28/400
- ☐ e. 192/360

✗

Your answer is incorrect.

The correct answer is:

28/400

Question 7

Incorrect

Mark 0.00 out of 1.00

A campus program evenly enrolls undergraduate and graduate students. If a random sample of 4 students is selected from the program to be interviewed about the introduction of a new fast food outlet on the ground floor of the campus building, what is the probability that all 4 students selected are undergraduate students?

Hint: evenly enrolls that means???

- ☐ a. 0.16
- ☐ b. 0.0625
- ☒ c. 0.9375
- ☐ d. None of them
- ☐ e. 1



Your answer is incorrect.

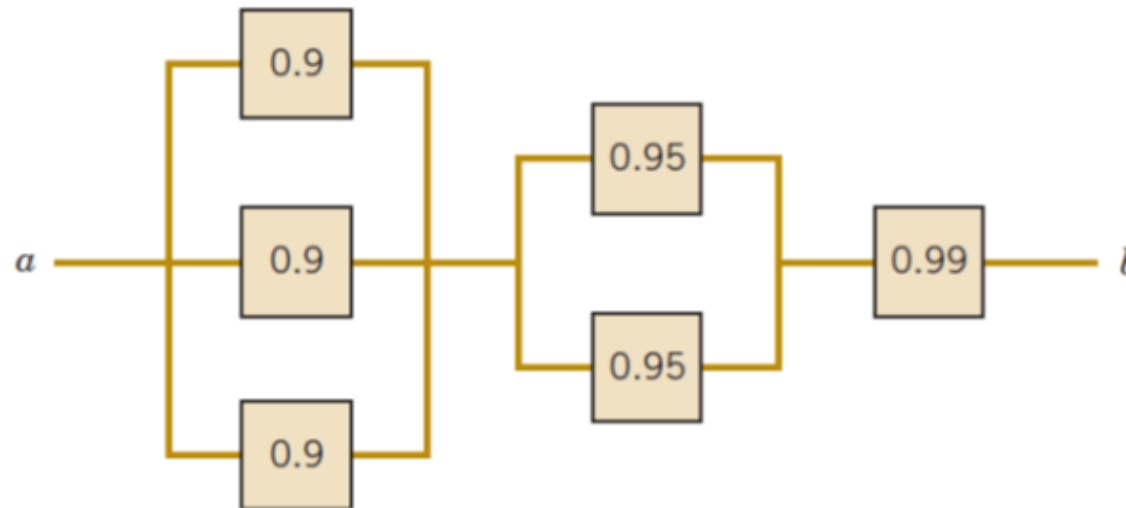
The correct answer is:
0.0625

Question 8

Correct

Mark 1.00 out of 1.00

The following circuit operates only if there is a path of functional devices from left to right. The probability that each device functions is shown on the graph. Assume that devices fail independently. What is the probability that the circuit operates?



- ☒ a. 0,986537
- ☐ b. 0,975
- ☐ c. 0,09965
- ☐ d. 0,9965
- ☐ e. 0,99



Your answer is correct.

The correct answer is:

0,986537

Question 9

Incorrect

Mark 0.00 out of 1.00

The probabilities of poor print quality given no printer problem, misaligned paper, high ink viscosity, or printer-head debris are 0, 0.3, 0.4, and 0.6, respectively.

The probabilities of no printer problem, misaligned paper, high ink viscosity, or printer-head debris are 0.8, 0.02, 0.08, and 0.1, respectively.

Determine the probability of high ink viscosity given poor print quality.

- ☐ a. 0
- ☐ b. 0,326531
- ☐ c. 0,612245
- ☒ d. 0,061224
- ☐ e. None of them



Your answer is incorrect.

The correct answer is:
0,326531

Question 10

Incorrect

Mark 0.00 out of 1.00

Suppose that I toss a fair coin and observe it land on heads or tails. Since the coin is "fair," the probability of heads showing is $1/2$, which means that

- a) every occurrence of a head must be balanced by a tail in one of the next two or three tosses.
- b) if I flip the coin many, many times, the proportion of heads will be approximately $1/2$ and this proportion will tend to get closer and closer to $1/2$ as the number of tosses increases.
- c) regardless of the number of flips, half will be heads and half tails.
- d) the probability of obtaining 50 heads in the first 100 tosses is 1.
- e) All of the above.

- ☐ a. b
- ☐ b. a
- ☒ c. d
- ☐ d. c
- ☐ e. e



Your answer is incorrect.

The correct answer is:

b

Question 11

Incorrect

Mark 0.00 out of 1.00

The probabilities of poor print quality given no printer problem, misaligned paper, high ink viscosity, or printer-head debris are 0, 0.3, 0.4, and 0.6, respectively. The probabilities of no printer problem, misaligned paper, high ink viscosity, or printer-head debris are 0.8, 0.02, 0.08, and 0.1, respectively.

Given poor print quality, what problem is most likely?

- ☐ a. Can not defined
- ☐ b. printer-head debris
- ☒ c. no printer problem problem
- ☐ d. high ink viscosity
- ☐ e. misaligned paper debris



Your answer is incorrect.

The correct answer is:
printer-head debris

Question **12**

Incorrect

Mark 0.00 out of 1.00

Suppose that we have a population of people, 10% of which are known to be insane.

Assume that there are exactly 100 people in this population and that we select three people from this population, without replacement.

Let A be the event, "at least one of the people selected is sane," and let B be the event "none of the people selected is insane."

Then $P(A|B)=?$

- ☒ a. 0.352
- ☐ b. 0
- ☐ c. 1
- ☐ d. 0.433
- ☐ e. Impossible to calculate this probability from the information given



Your answer is incorrect.

The correct answer is:

0

Question 13

Incorrect

Mark 0.00 out of 1.00

Suppose that we have a population of people, 10% of whom are known to be insane. Suppose that we then randomly select two people from this population. The **sample space** consists of

- a) the insane people in the population.
- b) the sane people in the population.
- c) the people in the population.
- d) the pairs of people in the population.
- e) the pairs of insane people in the population.

- ☐ a. e
- ☐ b. d
- ☒ c. c
- ☐ d. b
- ☐ e. a



Your answer is incorrect.

The correct answer is:

d

Question **14**

Incorrect

Mark 0.00 out of 1.00

Suppose that we consider a lot of product, 20% of which are known to be defective. We randomly select 2 products from this lot.

Let A be the event: "Both of the products selected are defective"

Let B be the even "At least one of the products selected is not defective"

Then the events A and B are?

- ☐ a. Mutually exclusive
- ☒ b. None of the above
- ☐ c. Impossible
- ☐ d. Independent
- ☐ e. Complimentary



Your answer is incorrect.

The correct answer is:
Complimentary

Question **15**

Not answered

Marked out of 1.00

Suppose that the events A and B are independent and that $P(A) = .3$ and $P(B) = .6$. Compute $P(A \cup B)$, $P(A | B)$, and $P(A \cap B)$.

Answer: ✖

The correct answer is: 0,72; 0,3; 0,18

