

Started on	Tuesday, 6 July 2021, 5:15 PM
State	Finished
Completed on	Tuesday, 6 July 2021, 5:18 PM
Time taken	3 mins 13 secs
Grade	10.00 out of 10.00 (100%)

Question **1**
Complete
Mark 1.00 out of 1.00
8220200

Which of the following is a tautology?

- Select one:
- ☐ A. $(q \rightarrow \neg p) \vee \neg q$
 - ☐ B. $(q \rightarrow \neg p) \wedge \neg p$
 - ☒ C. $(q \rightarrow \neg p) \vee q$
 - ☐ D. None of the mentioned

Question **2**
Complete
Mark 1.00 out of 1.00
8220200

What is the negation of $\neg p \vee (q \wedge r)$?

- Select one:
- ☐ A. $\neg p \wedge (\neg q \vee \neg r)$
 - ☐ B. $p \wedge (\neg q \wedge r)$
 - ☒ C. $p \wedge (\neg q \vee \neg r)$
 - ☐ D. $\neg p \vee (\neg q \vee \neg r)$

Question **3**
Complete
Mark 1.00 out of 1.00
8220200

Which of the following is logically equivalent to $p \rightarrow q$?

- Select one:
- ☐ A. $\neg p \wedge q$
 - ☐ B. $\neg p \vee \neg q$
 - ☐ C. $p \wedge \neg q$
 - ☒ D. $\neg p \vee q$

Question **4**
Complete
Mark 1.00 out of 1.00
8220200

Which of the following is a proposition?

- Select one:
- ☐ A.
Take the dog for a walk.
 - ☒ B.
There is an integer n such that $2n^2 - 1 = 0$.
 - ☐ C.
How are you feeling today?
 - ☐ D. $a^2 - 2ab + b^2$.

Question **5**

Complete

Mark 1.00 out of 1.00

8220200

The compound propositions p and q are called logically equivalent if is a tautology.

Select one:

- ☐ A. $\neg p \vee \neg q$
- ☐ B. $\neg(p \vee q)$
- ☒ C. $p \leftrightarrow q$
- ☐ D. $p \rightarrow q$

Question **6**

Complete

Mark 1.00 out of 1.00

8220200

$\neg(p \vee q) \wedge (p \wedge q)$ is a

Select one:

- ☒ A.
contradiction
- ☐ B.
none of the mentioned
- ☐ C.
contingency
- ☐ D. tautology

Question **7**

Complete

Mark 1.00 out of 1.00

8220200

$(p \vee F) \vee (p \vee T)$ is a

Select one:

- ☒ A.
tautology
- ☐ B.
none of the mentioned
- ☐ C.
contradiction
- ☐ D.
contingency

Question **8**

Complete

Mark 1.00 out of 1.00

8220200

If P is any statement, then which of the following is a tautology?

Select one:

- ☒ A. $P \vee \neg P$
- ☐ B. $P \wedge T$
- ☐ C. $P \vee F$
- ☐ D. $P \wedge F$

Question **9**

Complete

Mark 1.00 out of 1.00

8220200

Which of the following is NOT tautology?

Select one:

- ☐ A. $\neg(p \rightarrow q) \rightarrow p$
- ☐ B. $\neg(p \rightarrow q) \rightarrow \neg q$
- ☐ C. $\neg p \rightarrow (p \rightarrow q)$
- ☒ D. $p \rightarrow (p \wedge q)$

Question **10**

Complete

Mark 1.00 out of 1.00

8220200

The negation of the statement "It's cold but it's not snowing today. " is

Select one:

- ☒ A.
It's not cold or it's snowing today.
- ☐ B.
It's not cold and it's snowing today.
- ☐ C.
It's snowing but it's not cold today.
- ☐ D.
It's not cold or it's not snowing today.

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