

Unit 2 - Week 1

Course outline

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Week 1

- Symbolic Representation of Statements-I
- Symbolic Representation of Statements-II
- Tautologies and Contradictions
- Predicates and Quantifiers-I
- Predicates and Quantifiers-II
- Quiz : Assessment-1

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Assessment-1

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-08-14, 23:59 IST.

1) Which of the following is a statement

1 point

- May you live long!
- May God bless you!
- The sun is a star
- Hurrah! we have won the match

No, the answer is incorrect.
Score: 0

Accepted Answers:
The sun is a star

2) Negation of the conditional : "If it rains, I shall go to school " is

1 point

- It rains and I shall go to school
- It rains and I shall not go to school
- It does not rain and I shall go to school
- If it does not rain, I shall not go to school

No, the answer is incorrect.
Score: 0

Accepted Answers:
It rains and I shall not go to school

3) If $p \Rightarrow (\sim p \vee q)$ is false, the truth values of p and q are, respectively,

1 point

- F, T
- F, F
- T, T
- T, F

No, the answer is incorrect.
Score: 0

Accepted Answers:
T, F

4) Which of the following is a contradiction

1 point

- $(p \wedge q) \wedge \sim (p \vee q)$
- $p \vee (\sim p \wedge q)$
- $(p \Rightarrow q) \Rightarrow p$
- $\sim (p \wedge q) \vee q$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $(p \wedge q) \wedge \sim (p \vee q)$

5) $\sim p \wedge q$ is logically equivalent to

1 point

- $p \Rightarrow q$
- $(q \Rightarrow p)$
- $\sim (p \Rightarrow q)$
- $\sim (q \Rightarrow p)$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $\sim (q \Rightarrow p)$

6) Let $m(x)$: x is a man and $g(x)$: x is genius. Then the symbolic form of the statement "Some men are genius " using quanti fiers, variables and predicate symbols is

1 point

- $\exists x(m(x) \wedge g(x))$
- $\exists x(m(x) \wedge \sim g(x))$
- $\forall x(m(x) \Rightarrow g(x))$
- $\forall x \sim (m(x) \wedge g(x))$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $\exists x(m(x) \wedge g(x))$

7) $P(x)$ denote the sentence $x + 3 < 6$. On which of the following sets, $P(x)$ is not a propositional function?

1 point

- the set of natural numbers
- the set of all negative integers
- the set of all complex numbers
- the set of all irrational numbers

No, the answer is incorrect.
Score: 0

Accepted Answers:
the set of all complex numbers

8) Let \mathbb{R} be the universal set. Then the truth values of the following statements

1 point

$\forall x, x^2 = x$ and $\exists x, x^2 - 2x + 5 = 0$ are, respectively, given by

- F, T
- T, T
- T, F
- F, F

No, the answer is incorrect.
Score: 0

Accepted Answers:
F, F

9) The negation of the statement $\forall x, P(x) \wedge Q(x)$ is given by

1 point

- $\forall x \sim P(x) \wedge \sim Q(x)$
- $\forall x, \sim P(x) \vee \sim Q(x)$
- $\exists x, \sim P(x) \vee \sim Q(x)$
- $\exists x, \sim P(x) \wedge \sim Q(x)$

No, the answer is incorrect.
Score: 0

Accepted Answers:
 $\exists x, \sim P(x) \vee \sim Q(x)$

10) Let $\{1, 2, 3\}$ be the universal set. The truth values of the following statements

1 point

$\exists x \forall y \exists z, x^2 + y^2 < 2z^2$ and $\exists x \exists y \forall z, x^2 + y^2 < 2z^2$ are, respectively, given by

- T, T
- F, T
- T, F
- F, F

No, the answer is incorrect.
Score: 0

Accepted Answers:
T, F