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State	Finished
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Grade	**10.83** out of 15.00 (**72**%)

Question 1

Incorrect

Mark 0.00 out of 1.00

Considering the following premises:

$\neg p \vee q$

$r \rightarrow s$

$p \wedge r$

what would be the conclusion

Select one:

- a. the given premises are inconsistant ✗
- b. $\neg q$
- c. s
- d. $\neg p \vee r$

The correct answer is: s

Question 2

Partially correct

Mark 0.33 out of 1.00

Which of the following is/ are true?

Note:-(Multiple right answers with negative marking)

Select one or more:

- [x] a. $\forall x \forall y (P(x,y)) \Leftrightarrow \forall y \forall x (P(x,y))$ ✓
- [ ] b. $\forall x \exists y (P(x,y)) \Rightarrow \exists x \forall y (P(x,y))$
- [ ] c. $\exists x \forall y (P(x,y)) \Rightarrow \forall y \exists x (P(x,y))$
- [x] d. $\forall x \exists y (P(x,y)) \Rightarrow \exists x \exists y (P(x,y))$ ✓
- [ ] e. $\forall x \exists y (P(x,y)) \Rightarrow \exists x \forall y (P(x,y))$
- [x] f. $\forall x \forall y (P(x,y)) \Leftrightarrow \exists y \exists x (P(x,y))$ ✗

The correct answers are: $\forall x \exists y (P(x,y)) \Rightarrow \exists x \exists y (P(x,y))$, $\exists x \forall y (P(x,y)) \Rightarrow \forall y \exists x (P(x,y))$, $\forall x \forall y (P(x,y)) \Leftrightarrow \forall y \forall x (P(x,y))$

Question 3

Correct

Mark 1.00 out of 1.00

What is the Cardinality of the Power set of the set {3, 2, 1}?

Select one:

- ( ) a. 9
- ( ) b. 6
- (•) c. 8 ✓
- ( ) d. 7

The correct answer is: 8

Question 4

Incorrect

Mark 0.00 out of 1.00

What is the negation of the following logical expression

$\forall x \exists y (\neg F(x,y) \rightarrow (G(x,y) \wedge H(x,y)))$

Select one:

- ( ) a. $\exists x \forall y \ (F(x,y) \wedge G(x,y) \wedge \neg H(x,y))$
- ( ) b. $\exists x \forall y \ (F(x,y) \wedge G(x,y) \wedge H(x,y))$
- ( ) c. $\exists x \forall y \ (\neg F(x,y) \wedge \neg G(x,y) \vee \neg H(x,y))$
- (•) d. $\exists x \forall y \ (F(x,y) \wedge \neg G(x,y) \vee \neg H(x,y))$ ✗

The correct answer is: $\exists x \forall y \ (\neg F(x,y) \wedge \neg G(x,y) \vee \neg H(x,y))$

Question 5

Correct

Mark 1.00 out of 1.00

what we have to prove in proof by contradiction method

Select one:

- a. ~p → ~q is false
- b. ~p → ~q is true
- c. ~q → ~p is true
- d. p → ~q is false ✓

The correct answer is: p → ~q is false

Question 6

Incorrect

Mark 0.00 out of 1.00

Which logical operator is having the third highest preference

Answer: disjunction operator ✗

The correct answer is: Or

Question 7

Partially correct

Mark 0.50 out of 1.00

If X is any propositional statement, then which of the following is not a Contingency?

Note:-(Multiple right answers with negative marking)

Select one or more:

- a. X ∨ T
- b. X ∧ ¬F
- c. X ∧ ¬X ✓
- d. ¬X ∨ F

The correct answers are: X ∧ ¬X, X ∨ T

Question 8

Correct

Mark 1.00 out of 1.00

State which rule of inference is the basis of following argument

"If I am late today, then I will not cook food. If I do not cook food, then I will be hungry. Therefore, if I am late today, then I will be hungry."

Select one:

- a. hypothetical syllogism ✓
- b. modus tollens
- c. resolution
- d. disjunctive syllogism

The correct answer is: hypothetical syllogism

Question 9

Correct

Mark 1.00 out of 1.00

Russell paradox is

Select one:

- a. a set of all the sets which are not member of themselves, is not exists ✓
- b. powerset of an infinite set is undefined
- c. none of the given options
- d. a set of all the sets does not exists

The correct answer is: a set of all the sets which are not member of themselves, is not exists

Question 10

Correct

Mark 1.00 out of 1.00

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

Select one:

- a. None of the mentioned
- b. Tautology
- c. Contingency ✓
- d. Contradiction

The correct answer is: Contingency

Question 11

Correct

Mark 1.00 out of 1.00

F(x) is “x is a funny”;

C(x) is “x is comedian”;

What will be the representation for "Every person is funny comedian"

Select one:

- a. $\forall x(C(x) \land F(x))$
- b. $\exists x(C(x) \land F(x))$
- c. $\forall x(C(x) \rightarrow F(x))$ ✓
- d. $\exists x(C(x) \rightarrow F(x))$

The correct answers are: $\forall x(C(x) \land F(x))$, $\forall x(C(x) \rightarrow F(x))$

Question 12

Correct

Mark 1.00 out of 1.00

A satisfiable compound preposition results

Select one:

- a. only false values
- b. only true or both true and false values ✓
- c. only true values
- d. not defined

The correct answer is: only true or both true and false values

Question 13

Correct

Mark 1.00 out of 1.00

"If Joy is a mathematician then Joy is ambitious." and "Joy live in France and Joy is not ambitious" conclude that _____

Select one:

- a. Joy is mathematician and ambitious.
- b. Joy is not a mathematician. ✓
- c. Joy is a mathematician and live in France.
- d. Joy is a ambitious.

The correct answer is: Joy is not a mathematician.

Question 14

Correct

Mark 1.00 out of 1.00

Let P(x) be the statement

"the word x contains the letter a."

What is the truth value of P(an)

Answer: true

The correct answer is: T

Question 15

Correct

Mark 1.00 out of 1.00

The tautology $[(P \rightarrow Q) \wedge (Q \rightarrow R)] \rightarrow (P \rightarrow R)$ stands for which rule of inference

Select one:

- a. modus tollens
- b. disjunctive syllogism
- c. resolution
- d. hypothetical syllogism

The correct answer is: hypothetical syllogism