

SYMBOLISATION

Answer in one word :-

1. Symbolic logic is entirely formal in nature -
Is it true?

→ Yes.

2. 'Not' is/is not a logical constant.

→ Is a logical constant.

3. Application of Ideogram is/is not a characteristic of Symbolic logic.

→ Is

4. Symbolic logic uses deductive/inductive method.

→ Deductive.

5. If p is true and q is also true, what is the value of $\neg p \vee q$?

→ True.

6. ' $\vee$ ' represents Conjunction/Disjunction

→ Disjunction.

7. Symbolic - "If I have money and also friends, there I can organise the function."

→ $(p \cdot q) \supset r$

8. Variable is/is not a logical Connection

→ Is not

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9. $p \vee q$ stands for either he will not attend the meeting or he will -
Is it true?

Ans: No.

10. Phonogram stands for Sound.

11. Ideogram stands for sound / concept.
→ Concept.

12. A variable is/is not a Symbol.
→ Is.

13. Illustrate Variable.

→ p, q, r, s .

14. Symbolise he is neither intelligent nor industrious.

→ $(\sim p \vee \sim q)$.

15. Find the value of $\sim(\sim q \supset \sim p)$, if truth is the value of both the variables.

→ $= \sim(F \supset F)$
 $= \sim T$
 $= F$

16. What is Symbolic Logic?

Ans: Symbolic Logic is the name given to that part and the method of treatment of formal logic which is comparatively of recent origin and in which specialised symbols are used extensively to express the arguments as

17. What

Ans: Symbol designed nations of that

18. Define

Ans: General logic stand values which can be

19. Define

Ans: Logical exhibit and the The Negati And

If--- Either- Equiva

20. Define

Ans: Classical class

to determine their value in a better and easier way.

✓ 17. What is Symbol? ✓

Ans: Symbol is a sign which is consciously designed to stand for something. Eg; the national flag of a nation is the Symbol of that nation.

✓ 18. Define Variable. ✓

Ans: (Generally variable means changeable.) In logic variable means a symbol which can stand for anyone of the given range of values. (Variables are those symbols which do not have any fix meaning. They can be given any range of value.)

✓ 19. Define Constant.

Ans: Logical Constants are those symbols which exhibit the form of compound proposition and which bears the same meaning in the symbolic expression of proposition.

The following are the logical constants :-

Negative (not) $\rightarrow$ ' $\sim$ ' (curl)

And $\rightarrow$ ' $\cdot$ ' (Dot)

If--- then $\rightarrow$ ' $\supset$ ' (Horse shoe)

Either--- Or $\rightarrow$ ' $\vee$ ' (Vel)

Equivalence (If and only if) $\rightarrow$ ' $\equiv$ ' (three bar)

✓ 20. Define Classical Logic.

Ans: Classical logic is the name given to these

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parts and that method of ~~these~~ formal logic which have come down substantially are changed from classical and medieval time.

21. What is the relation between Symbolic and Classical Logic?

Ans: 1) Both the two systems are concerned with forms and validity of arguments.

2) Modern Logic is a development of concepts and technique which were implicate in the work of Aristotle, the founder of classical logic.

22. What is called a truth value of a Proposition?

Ans: Truth or falsity is the very essence or character of a proposition. The truth or falsity of a proposition is called its truth value.

23. What is Truth Value method?

Ans: The method or technique in which the truth table are used to determine the validity or invalidity of an argument is called the truth table method.

24. What are the two different types of Symbol?

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Ans: Symbols and Non-Symbols are called to indicate are called honesty, C

s etc
+, -, $\therefore$
The non-Symbolic

25. Distinguish

Ans: Symbol and Sign are also because the between Sign which something a nation are pre-not alwa

26. Distinguish

Ans: Ideogram directly 'x' and Ideogram phonogram stands for 'C' Sign

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Ans: Symbols are of 2 types, viz: Verbal and Non-Verbal. Different words used to indicate substance, quality, action etc are called Verbal Symbols. Eg: Books, honesty, Come, etc.

Different letters such as p, q, r, s etc or mathematical symbols such as +, -, $\div$, x etc are non-verbal Symbols. The non-verbal Symbols are used in Symbolic Logic.

25. Distinguish between Sign and Symbol.

Ans: Symbol and Sign differ. It is not easy to draw a hard and fast line between the two. Sign may be natural or artificial but Symbols are also artificial. Smoke is the Sign of fire because there is natural and necessary relation between smoke and fire. But Symbol is that Sign which is used consciously to indicate something. A national flag is the symbol of a nation. It is consciously designed. Symbols are pre-determined artificial sign which is not always in the case of Sign.

26. Distinguish between Phonogram and Ideogram.

Ans: Ideogram are those symbols which stands directly for concepts, Eg: Multiplication Sign 'x' and Such other Signs are Ideograms. Ideograms are often contrasted with phonograms. Phonogram are sign which stands directly for sounds and indirectly for concepts Eg: the written word 'multiplication Sign' in Phonogram. Unlike the Ideograms, the

Phonogram represents Spoken English words which corresponds to them while Phonograms refer to the words in language which are written according to some of phonetic rules, Ideogram refers to the concepts or the ideas represented by the words.

27. What is Truth Function? ✓

Ans: A Truth function is a compound expression where the value of the expression is determined by the value of the constituent variables. The value of the Statement or Compound expression is determined as soon as the truth value of the constituent variables are known. Eg; the statement form ' $p \vee q$ ' as a truth function because the truth value of the expression is determined by the truth values of the two constituent variable p and q .

28. What is a Truth Table? ✓

Ans: Truth table is a convenient way to show the truth values of a truth function taking into consideration all possible truth values of the propositional variables involved in it. So, the truth table is a definition of the truth function. The Compound Sentence ' p and q ' is called truth function of its component Sentence p and q because when we know the truth value of the Compound

Sentence
may
is ca

29. What is

Ans: A Propositional Sentence which is a boy because 'falsity' such of 'truth' to the statement

30. What is

Ans: Propositional Simple is one
E.g; You
' p '

which
as
Bida
express

the
are
propo
i) If
ii) Eith
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Sentence is thereby determined. The tabular way of representing the dependence is called a truth table.

29. What is Proposition?

Ans: A Proposition is a sentence or combination of sentences which is either true or false, (E.g; Ram is a boy, $5+2=10$ etc) are propositions because the properties of 'truth' and 'falsity' can be meaningfully applied in such statements. On the otherhand, a property of 'truth' and 'falsity' cannot be applied to the statement 'Do you know him?', this statement is therefore not a proposition.

30. What are the two kinds of Proposition?

Ans: Proposition may be divided into 2 kinds, Simple and Compound. A Simple Proposition is one which consist of a single statement, E.g; You study hard, this can be Symbolised as 'p'.

A Compound Proposition is one which contain two or more statements as component, E.g; Ram is a boy and Sita is a girl. This is Symbolically expressed as 'p' and 'q'.

The following examples show the way in which various statements are joined and negated to form compound propositions.

- i) If you read then will you pass.
- ii) Either he will come or she will come.

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- iii) You worked hard and you passed.
iv) It is false that you worked hard.

Now the meaning of the above propositions 'is' ignored, the symbol $\neg$, $\wedge$ and $\vee$ are used for the first, second and third statement then the proposition can be symbolically expressed in the following way -

- i) If p then q
ii) Either p or q
iii) p and q
iv) Not p