Symbolic Logic

Que.1. Which are the binaries in Logic Gate?   **[Marks :(2)]**

Ans. 0 and 1

Que.2. What is Logic Gate?   **[Marks :(2)]**

Ans. Definition.

Que.3. Symbolise the proposition 'If election is declared then the new laws cannot be enacted' and prepare a possible truth table.   **[Marks :(2)]**

Ans. (p☐q)

Truth table of Implication

Que.4. If 'p' is True ,'q' is False and 'r' is True find the truth value of (p . q) V r [Marks :(3)]

Ans. (T . F) VT

F V T

T

Que.5. If 'p' is True and 'q' is False find the truth value of (p . q)   **[Marks :(3)]**

Ans. F

Que.6. Match the following   **[Marks :(5)]**

SI No.	Operators	Symbols	Meaning of symbols
a	Negation	V	Not
b	Conjunction	s	If ...then'''
c	Disjunction	☐	Either ..... or...
d	Implication	.	If and only if
e	Material Equivalence	☐	And

Ans.

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d	Implication	☐	If ... then ...
e	Material Equivalence	☐	If and only if

Que.7. How many possible truth values are there in a simple proposition? [Marks :(1)]

Ans. Two

Que.8. Symbolise the following proposition. [Marks :(1)]

"India Gate is in New Delhi and Gate Way of India is in Mumbai"

Ans. p.q

Que.9. Define logical form. [Marks :(3)]

Ans. Definition

Que.10. Prepare a table showing the characteristics of classical logic and modern logic.

Ans.

Characteristics of classical logic	Characteristics of symbolic logic

Que.11. Define symbolic logic. [Marks :(3)]

Ans. Definition

Que.12. Write the functions of constants and variable in symbolic logic. [Marks :(2)]

Ans. Constant- logical operators – meaning is constants -eg. $\equiv$, $\square$, . ,V

Variable – meaning varies eg, p, q etc.

Que.13. Why do we call constants as logical operators? [Marks :(2)]

Ans. Function as an operator in logical statements

Que.14. Which among them form the basis of propositional calculus [Marks :(1)]

a) Constants and judgements

b) Words and sentences

c) Variables and judgements

d) Variable and constants

Ans. d) Variable and constants

Que.15. What is the focus of modern logic? [Marks :(1)]

a) Internal structure of proposition and argument

b) Differentiate proposition from argument

c) Ensure comprehensiveness in argument

Ans. a)Internal structure of proposition and argument

Que.16. Find the odd one out. [Marks :(1)]

a) ≡ b)□ c). d)V e)q

Ans. e) q

Que.17. Differentiate constants and variables in symbolic logic. **[Marks :(4)]**

Ans. logical constant : logical operators- meaning is constant- sentential connective

Eg. dot(.), Vedge (V), Horse shoe (□), Tripple bar ( ), Curl (s)

Variables : p, q, r, ...

Que.18. Define symbolic logic. **[Marks :(2)]**

Ans. Definition

Que.19. How is modern logic different from classical logic? **[Marks :(4)]**

Ans. Classical logic : Aristotle -used symbols as variables -eg. All S is P.

Modern logic : Focus internal structure of propositions and arguments— constance and variable.

Que.20. Explain Truth functions with example. **[Marks :(4)]**

Ans. A compound sentence of its component parts.

'p' and 'q' are the component of truth functions 'p and q'.