COURSE: MATHEMATICAL STRUCTURES
COURSE CODE: 21MAT41A
MODULE-2: Fundamentals of Logic
Multiple Choice Questions

SI.No	QUESTIONS
1.	Which of the following satisfies commutative law? a) $\wedge$ b) v c) $\leftrightarrow$ d) All of the mentioned
2.	Which of the following propositions is tautology? a) $(p \vee q) \rightarrow q$ b) $p \vee (q \rightarrow p)$ c) $p \vee (p \rightarrow q)$ d) Both (b) & (c)
3.	If there are 'M' switches in series numbered from 1, 2, …, M. For circuit to be complete and bulb to glow which of the following is necessary? a) $1 \wedge 2 \wedge 3 \wedge \ldots \wedge M$ should be on b) $1 \wedge 2 \wedge 3 \wedge \ldots \wedge M$ should be off c) 1 v 2 v 3 v … v M should be on d) None of the mentioned
4.	The statement," Every comedian is funny" where $c(x)$ is "x is a comedian" and $f(x)$ is "x is funny" and the domain consists of all people. a) $\exists x, (c(x) \wedge f(x))$ b) $\forall x, (c(x) \wedge f(x))$ c) $\exists x, (c(x) \rightarrow f(x))$ d) $\forall x, (c(x) \rightarrow f(x))$
5.	The premises $(p \wedge q) \vee r$ and $r \rightarrow s$ implies which of the conclusion? a) $p \vee r$ b) $p \vee s$ c) $q \vee s$ d) $q \vee r$
6.	The proposition $(P \Rightarrow Q) \wedge (Q \Rightarrow P)$ is a (a) Tautology (b) Contradiction (c) Contingency (d) None of the above
7.	Which of the following pairs of propositions are not logically equivalent? (a) $((p \rightarrow r) \wedge (q \rightarrow r))$ and $((p \vee q) \rightarrow r)$ (b) $((p \wedge q) \wedge (\neg p \wedge \neg q))$ and $p \leftrightarrow q$ (c) $((p \wedge q) \wedge (\neg p \wedge \neg q))$ and $p \leftrightarrow q$ (d) $((p \wedge q) \rightarrow r)$ and $((p \rightarrow r) \wedge (q \rightarrow r))$

8.	Consider the following two statements. S1: If a candidate is known to be corrupt, then he will not be elected S2: If a candidate is kind, he will be elected Which one of the following statements follows from S1 and S2 as per sound inference rules of logic? a) If a person is known to be corrupt, he is kind b) If a person is not known to be corrupt, he is not kind c) If a person is kind, he is not known to be corrupt d) If a person is not kind, he is not known to be corrupt
9.	The symbolization for a conjunction is... a) $p \rightarrow q$ b) $p \ \& \ q$ c) $p \lor q$ d) $\sim p$
10.	A conditional is symbolized like this… a) $p \lor q$ b) $p \rightarrow q$ c) $p * q$ d) $p \ \& \ q$