

**BIRLA INSTITUTE OF TECHNOLOGY OFF-CAMPUS DEOGHAR, DEPARTMENT OF  
MATHEMATICS**

**CLASS: BTech**

**(1<sup>st</sup> QUIZ EXAMINATION)**

**SESSION : MO/24**

**SEMESTER : 3<sup>rd</sup> BRANCH: CSE**

**TIME: Scheduled Class Time**

**SUBJECT: MA 205 DISCRETE MATHEMATICS**

**FULL MARKS: 10**  
Marks

- Q1. Verify the law of syllogism by truth table, i.e., show that the proposition  
 $(p \vee q) \wedge (\sim p \vee r) \rightarrow (q \vee r)$  is a tautology
- Q2. Obtain the principle disjunctive normal form (DNF) of  
 $p \rightarrow ((p \rightarrow q) \wedge \sim (\sim q \vee \sim p))$
- Q3. Show by mathematical induction  $6^n - 5n + 4$  is divisible by 5  $\forall n \geq 1$

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3

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**::::: 02/09/2023 :::::**