Assignment-IIPC

Instructions

- Write your information (name, id, section department etc.) on the front page.
- Submit a PDF version of this file using the link : https://forms.gle/5mQfRA9QsCjwuwmi9 by the mentioned date.
- Name your pdf file as "YourName_ID". e.g., Raj_1022

Deadline: within 22/11/2024

Solve all the problems:

1. What symbol is used to denote the disjunction of two propositions p and q?
2. Build a truth table for $(p \vee q) \leftrightarrow r$
3. Build a truth table for $(p \wedge q) \rightarrow r$.
4. Let p: It is cold and q: It is raining. Write the symbolic form of the statement "It is cold or it is not raining".
5. Let p: The student has attended more than 75% of classes, and q: The student has scored more than 50% marks in the exam. Write the symbolic form of the statement:
   "If the student has attended more than 75% of classes and scored more than 50% marks in the exam, then the student will pass at SNU."

   (a). $(p \wedge q) \rightarrow$ Pass
   (b). $(p \vee q) \rightarrow$ Pass
   (c). $(\neg p \wedge q) \rightarrow$ Pass
   (d). $(p \vee \neg q) \rightarrow$ Pass

6. Construct the truth table for the statement: $(p \vee q) \rightarrow (p \wedge q)$.
7. Using a truth table, determine which of the following compound propositions are tautologies and which of them are contradictions:
   (a) $(\neg q \wedge p) \vee \neg(p \wedge q)$
8. Construct the truth table for the statement: $(p \vee \neg q) \rightarrow (p \vee q)$