



SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

Coimbatore – 35



DEPARTMENT OF MATHEMATICS

UNIT-I LOGIC AND PROOFS

TYPES OF PROOF:

- * Direct proof.
- * Indirect proof.
- * Conditional proof.
- * Inconsistent proof.

DIRECT PROOF:

If H_1, H_2, \dots, H_n are premises and C is the conclusion of the principle involved in direct proof is $H_1 \wedge H_2 \wedge \dots \wedge H_n \Rightarrow C$

[When a conclusion is derived from a set of premises by using the accepted rules of reasoning, then such a process of derivation is called a direct proof.]



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INDIRECT PROOF:

If H_1, H_2, \dots, H_n are the given premises & C is the conclusion then by indirect proof, we get

$\neg C \wedge (H_1 \wedge H_2 \wedge \dots \wedge H_n) \Rightarrow F$, where F is the contradiction.

INCONSISTENT PROOF:

A set of premises H_1, H_2, \dots, H_n is said to be inconsistent if, their conjunction implies contradiction.

(i) $H_1 \wedge H_2 \wedge H_3 \wedge \dots \wedge H_n \Rightarrow F$.