

AI (XI) - Short Test Syllabus (2025)

Unit 1: Basic Concepts of Artificial Intelligence

1.Introduction to Artificial Intelligence

- 1.1 Definition of AI
- 1.2 Evolution of AI
- 1.3 Applications in Different Fields
- 1.4 Commonly Used AI Applications
- 1.5 Benefits of AI

- Decision Making
- Remote Patient Monitoring
- Data Analysis
- Solving Complex Problems

2.Role of Data and Information in AI

- 2.1 Importance of Data in AI
- 2.2 Evolution of Computing
- 2.3 Types of Data: Structured, Unstructured, Semi-structured
- 2.4 Data Identification, Acquisition, and Exploration
- 2.5 Binary Logic System
- 2.6 Conditional Gates (AND, OR, NOT, NAND, NOR, XOR, XNOR.)
- 2.7 Deterministic vs. Probabilistic Nature of Real-Life Problems

3.Overview of Decision Making

- 3.1 Decision Making in Machines and Computers
- 3.2 Role of Cybersecurity in AI and Machine Intelligence

4.Components of an AI Project Framework

- 4.1 Problem Scoping
- 4.2 Data Acquisition
- 4.3 Data Exploration
- 4.4 Modeling (Overview)
- 4.5 Model Evaluation (Overview)

5.Overview of Data Representation and Programming in Python

- 5.1 Data Types and Variables
- 5.2 Operators in Python
- 5.3 Conditional Statements (if, if-else, etc.)
- 5.4 Control Statements (loops, break, continue)
- 5.5 Functions in Python

Unit 3: Mathematics for AI

1. Matrices

- 1.1 Introduction to Matrices
- 1.2 Types of Matrices (Row, Column, Identity, etc.)
- 1.3 Matrix Operations
 - Addition
 - Subtraction
 - Multiplication
 - Transpose