Date __/__/____ Page No.: _____

# Compiler Design

## Unit - 4

1) Intermediate Code generation
2) Quadruple, triple, indirect triples
3) Syntax tree, 3-address code Evaluation
4) Synthesized & inherited attributes
5) Intermediate language - ~~definition~~ declaration
6) Assignment statements.
7) Boolean statements, Case Statement
8) Back patching - Procedure Calls.
9) Code Generation.
10) Issues in design of code generator
11) Target machine - Runtime Storage Management
12) A simple Code generator
13) Code Generation Algorithm
14) ~~Go~~ Register and Address Descriptors.
15) Generating code of Assignment statements
16) Cross Compiler - T diagrams.
17) Issues in cross compilers.

Date ___/___/_____ Page No.: _____

# Compiler Design

## Unit-5

1) Code optimization
2) Introduction of Principal Sources of optimization
3) Function Preserving Transformation
4) Loop optimization
5) Optimization of basic blocks
6) Building Expression of DAG
7) Peephole optimization
8) Basic Blocks, Flow Graphs
9) Next-use Information
10) Introduction to Global data flow Analysis
11) Computing gen & kill
12) Computing in and out
13) Parameter passing, Runtime Environment
14) Source Language issues
15) Storage optimization
16) Activation Records
17) Storage Allocation Strategies

Date ___/___/_____ Page No.:

# DBMS

## Unit - 4

1) Relational Algebra
2) Pitfalls in Relational database
3) Functional dependency.
4) Closure of FD set, closure of attributes
5) Normalization - 1NF, 2NF, 3NF, BCNF, 4NF, 5NF
6) Decomposition using FD - dependency preservation.
7) Multi-valued dependency
8) Join dependency

## Unit - 5

1) Transaction Concept, properties of transaction
2) Serializability of transactions.
   testing for serializability, System recovery.
3) Concurrency control
4) 2 phase Commit protocol, Recovery & Atomicity
5) Log based recovery.
6) Concurrent execution of transactions and related problems
7) Locking mechanism, solution to concurrency related problems
8) Deadlock.
9) 2 phase locking protocol, isolation, intent locking

Page No.

Date ___/___/___

# Network Security

## Unit-4

1) SSL/TLS Basic Protocol
2) Computing Keys
3) Client Authentication
4) PKI as deployed by SSL.
5) SSL Attacks fixed in V3
6) Exportability
7) Encoding, Encrypted Record, Handshake Message, Change cipher spec & Alerts.
8) SET

## Unit-5

1) Wireless Security
2) Authentication & Confidentiality
3) Cellphone & GSM Security
4) Security in UMTS
5) Wireless LAN Vulnerabilities, Phising
6) Buffer overflow
7) Format String Attacks & Cross-site Scripting
8) SQL injection
9) Case Study: Secure Inter-branch Payment transaction
10) Virtual Elections.

Date __/__/____ Page No.: ____

# HPC

## Unit-4

1) OpenMP, Parallel execution & Data Scoping
2) openMP Worksharing for loops.
3) Synchronization, Reduction, Loop Scheduling, Tasking
4) Wavefront parallelization.
5) Efficient openMP programming
6) Profiling openMP programs.
7) Performance pitfalls
8) Impact of openMP worksharing constructs
9) Determing openMP overhead for short loops
10) False sharing

1) Distributed memory parallel programming with MPI
2) MPI
3) Message and point-to-point Communication, Collective and Nonblocking point-to-point communication.
4) Virtual topoloies.
5) MPI parallelization of a Jacobi Solver
6) MPI Implementation.
7) Performance properties, MPI performance tools.
8) Communication parameters
9) Synchornization, serialization, contention, Implicit serialization ~~and Synchr~~
10) Reducing communication overhead & optimal
11) domain decomposition.
12) Aggregating messages Nonblocking vs asynronous.

# AI

## Unit-4

1) Planning - its problems, simple planning agents
2) Planning language
3) Block world, Goal stack planning
4) Mean Ends Analysis
5) Non-linear Planning
6) Conditional planning, Reactive Planning
7) Learning - ML :- it goal & challenges, Concepts and models
8) Artificial neural based learning Back propagation
9) Support vector machines, Reinforcement learning.
10) Adaptive, Multi agent based, Ensemble learning.
11) Learning for decision making, distributed learning.
12) Speed-up learning.

## Unit-5

1) Expert Systems → Architecture, Pro, Cons
2) Rule Based Systems, frame based expert systems
3) Natural Language Processing → it levels.
4) Syntactic & Semantic Analysis
5) Information retrieval & Extraction
6) Machine translation
7) NLP Application
8) ~~Ad~~ Cloud Computing & intelligent agents
9) Business intelligence & analytics.
10) Sentiment Analysis
11) Deep learning Algorithms
12) Planning & Logic in Intelligent Agents