Compiler Design

Unit-2

1) Syntax Analysis
2) Syntax Error Handling
3) Elimination of Ambiguity, Left Recursion, Left factoring
4) Top Down Parsing
5) Computation of first, follow
6) Construction of predictive parsing Table.
7) LL(1) Grammar. & Error recovery in Predictive Parsing

Unit-3

1) Bottom up Parsing, Reductions, Handle Pruning
2) Shift Reduce Parsing
3) LR Parser
4) Computation of LEADING, TRAILING
5) SLR Grammar & Parsing Tables
6) Construction of Canonical LR(1) & LALR.

Aptitute Syllabus for CT-2

1) HCF, LCM, Highest Exponents, Remainder, Trailing zeros, Unit Digits
2) Percentage, Profit Loss Discount
3) Time Speed Distance
4) Time & Work
5) Equations

DBMS

Unit-2

1) Database Design & Design Process
2) ER Model, ER diagram
3) Key, Attributes & constraints
4) Mapping Cardinality
5) Generalization, Specialization and Aggregation
6) Weak Entity, Strong Entity
7) Convert ER to Relational Table.

Unit-3

1) Basics of SQL - DDL, DML, DCL, TCL
2) Structure creation, alternation.
3) Defining Constraint
4) Functions :- aggregation function; Built in functions
5) Sub Queries, correlated sub queries; Nested Queries.
   Views & it types
6) Transaction Control Commands, Commit, Roll-back, Save point
7) PL/SQL Concept - Cursors
8) Stored Procedure, function Triggers, Exceptional Handling
9) Query Processing

Network Security

Unit-2

1) IPSEC :- Security Association Database, Security Policy Database
2) IP header Protection :- IPv4 & IPv6 Header, Authentication Header
3) ESP
4) Internet key Exchange : Phase I, Phase II
5) ISAKMP / IKE Encoding.

Unit-3

1) Security Services for E-Mail
2) Establishing keys :- Public & Secret
3) Privacy :- End-to-End
4) Message integrity, Non-repudiation.
5) PGP
6) Efficient Encoding
7) Certificate and key revocation
8) Signature types, Privat key, ring types, Anamalies
9) S/MIME

HPC

Unit-2

1) Scalar Profiling
2) Hardware Performance counters
3) Manual instrumentations
4) Simple measure, large impact :- Elimination of common subsequence, Avoiding braches, using SIMD instruction set.
5) Role of Compilers
6) Common optimization options :- Inlining, Aliasing Computational accuracy, Using compiler logs.
7) C++ optimizations :- Temporaries, Dynamic memory management, Loop kernels & iterators.

Unit-3

1) Taxonomy of parallel computing paradigms
2) Shared memory computers
3) Cache Coherence
4) UMA, - ccNUMA
5) Distributed memory computers, Hybrid Systems
6) Networks - Basic performance characteristics of network
7) Buses, Switched and fat-tree networks.
8) Mesh network, Hybrids
9) Parallelisms & it types :- Data, Functional
10) Parallel scalability, & Parallel efficiency.
11) Refined performance models.
12) Load inbalance

AI

Unit-2

1) Searching techniques :- Uninformed & Informed
   - Uninformed & it sub types (DFS, BFS, DLS, Bidirectional Iterative)
   - Informed & it sub-types (A*, BFS, AO*, Hill climbing)
2) Genetic Algorithm
3) Adversarial Search Methods :- Game playing
4) Mini max algo
5) Alpha beta pruning

Unit-3

1) Knowledge and reasoning
2) Knowledge base agents - Logic :- Propositional & Predicat
3) Unification & resolution
4) Knowledge representation using rules, Semantic nets, frames inference
5) Uncertain knowledge and reasoning
6) Bayesian probability
7) Probabilistic reasoning
8) Forward & Backward reasoning
9) Other uncertain techniques :- Data Mining. Fuzzy logic
10) Dempster - Shafer theory.