

FIRST SEMESTER

COURSE TITLE	Paper Code	MARKS		TOTAL
		THEORY	PRACTICAL	
MATHEMATICAL FOUNDATION OF COMPUTER SCIENCE	PGDCA-110	50	50	100
INTRODUCTION TO IT	PGDCA-120	50	50	100
COMPUTER PROGRAMMING USING C	PGDCA-130	50	50	100
DATA BASE MANAGEMENT SYSTEM	PGDCA- 140	50	50	100
LAB (PROGRAMMING IN C)	PGDCA- 150 P	00	100	100
LAB (DBMS)	PGDCA- 160 P	00	100	100

SECOND SEMESTER

COURSE TITLE	Paper Code	MARKS		TOTAL
		THEORY	PRACTICAL	
JAVA PROGRAMMING	PGDCA-210	50	50	100
OBJECT ORIENTED PROGRAMMING USING C++	PGDCA-220	50	50	100
DATA STRUCTURE	PGDCA-230	50	50	100
INTERNET & WEB TECHNOLOGY	PGDCA- 240	50	50	100
LAB (JAVA PROGRAMING)	PGDCA- 250 P	00	100	100
PROJECT	PGDCA- 260 P	00	100	100

Note:

Theory Paper : 30% Continuous Internal Assessment and 70% University examination.
 Practical Paper : 30% Continuous Internal Assessment and 70% University examination

Continuous Internal Assessment:

- 1) Two or three tests out of which minimum two will be considered for Assessment
60% of Continuous Internal Assessment
- 2) Seminars/Assignments/Quizzes
30% of Continuous Internal Assessment
- 3) Attendance, class participation and behaviour
10% of Continuous Internal Assessment

Maximum Time : 3 Hrs.

University Examination

: 70 Marks

Total Marks : 100

Continuous Internal Assessment : 30 Marks

Minimum Pass Marks : 40%

A) Instructions for paper-setter

The question paper will consist of five sections A, B, C, D and E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 15% marks each. Section E will have 10-20 short answer type questions which will cover the entire syllabus

uniformly and will carry 40% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt one question each from sections A, B, C and D of the question paper and the entire section E.
2. Use of non-programmable scientific calculator is allowed.

SECTION A

Sets and Elements, universal set and Empty set, subsets, Venn Diagrams, Set Operations, Algebra of sets, cartesian product, Relations, mappings, Countable and Uncountable sets, Domain and range, propositional logic, FOPL, Logical equivalences, Quantifiers.

SECTION B

Partially ordered sets, Extremal elements of partial ordered sets, least upper bound and greatest lower bound, Finite Boolean algebra, Functions on Boolean algebra, Lattices, Bounded lattices, Distributive lattices, complemented lattices.

SECTION C

Matrices, Matrix addition and scalar multiplication, Matrix multiplication, Transpose, Inverse, Determinants, Eigen values and Eigen vectors. Permutations, Combinations, Pigeon hole principle, Elements of Probability, Conditional probability, Baye's Theorem.

SECTION D

Tree, Binary tree, traversals, Huffman's algorithm, Minimum spanning trees, Euler graph, Hamiltonian cycle, Cutsets, Matching, Coloring.

Reference:-

1. C.L.Licu "Elements of Discrete Mathematics", TMH
2. Lipschutz & Seymour "Discrete Mathematics" (2Th Edition), Schaum's outlines,.
3. Trembley Manohar " Discrete Mathematical Structures with Application to computer science" TMH.

Maximum Time : 3 Hrs.

Total Marks : 100

Minimum Pass Marks : 40%

University Examination : 70 Marks

Continuous Internal Assessment : 30 Marks

A) Instructions for paper-setter

The question paper will consist of five sections A, B, C, D and E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 15% marks each. Section E will have 10-20 short answer type questions which will cover the entire syllabus

uniformly and will carry 40% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt one question each from sections A, B, C and D of the question paper and the entire section E.
2. Use of non-programmable scientific calculator is allowed.

SECTION A

Definition of Information Technology, Use of IT, Definition of information system, need of information system, definition of knowledge, Range of application : Scientific, business, educational, whether forecasting, and remote sensing, planning, e-commerce, web publishing, Management Information System, Decision Support System, inventory control, medical, industrial control, banks, railways, etc.

SECTION B

Computer Fundamentals: Block structure of computer, Characteristics of computers, Problem solving with computers, Generation of computers, Classification of computers.

Number System : Bit, Byte, Binary, Decimal, Hexadecimal, and Octal system, Conversion from one system to the other, Error detecting codes, Representation of characters, Integers and fractions.

Binary Arithmetic : Addition, Subtraction and Multiplication.

SECTION C

Input and Output units : Their functional characteristics, main memory, cache memory, read only memory, overview of storage devices – floppy disk, hard disk, compact disk, tape.

SECTION D

Computer Networks and Communication : Network types, Network topologies, Network communication devices, Physical communication media, TCP/IP.

Internet and its Applications : E-mail, Telnet, FTP, WWW, Internet chatting.

Reference:-

1. D.H.Sanders, "Computers Today", McGraw Hill, 1988.
2. T.N. Trainer, "Computers" (4th Edition) McGraw Hill, 1994.
3. Kenneth C.Laudon, Jane P. Laudon "Management Information System"(7th Edition),
4. V. Rajaraman, "Fundamentals of Computers" (2nd Edition), Prentice Hall of India, New Delhi, 1996.
5. B. Ram, "Computer Fundamentals", Wiley, 1997.

Maximum Time : 3 Hrs.

University Examination : 70 Marks

Total Marks : 100

Continuous Internal Assessment : 30 Marks

Minimum Pass Marks : 40%

A) Instructions for paper-setter

The question paper will consist of five sections A, B, C, D and E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 15% marks each. Section E will have 10-20 short answer type questions, which will cover the entire syllabus uniformly and will carry 40% marks in all.

B) Instructions for candidates

1. Candidates are required to attempt one question each from sections A, B, C and D of the question paper and the entire section E.
2. Use of non-programmable scientific calculator is allowed.

SECTION A

Data types, constants, Variables, Arithmetic and logical expressions, Data input and output, Assignment statements, Conditional statements.

SECTION B

Iteration, Arrays, String processing, User-defined data types, functions, recursion, Parameter passing by reference & by value.

SECTION C

Structures, Multiple Structure, Array of Structure, Unions, Pointers, Character pointers, Pointers to arrays, Array of pointers, Pointers to structures.

SECTION D

File handling, Open & closing file Binary files, Structured programming concepts, Top down & Bottom-Up design approaches.

Reference:-

1. Rajarman V., "Fundamentals of Computers" (PHI, 1992)
2. D.Dromey "How to solve it by Computer", Prentice-Hall, 1985
3. E. Balaguruswami "Programming in C" Tata McGraw Hill.
4. Kanetkar, "Let Us C" BPB Publications.

Maximum Time : 3 Hrs.

Total Marks : 100

Minimum Pass Marks : 40%

University Examination : 70 Marks

Continuous Internal Assessment : 30 Marks

(A) Instructions for the Paper setter:

The question paper will consist of five sections: A, B, C, D and E. Sections A, B, C and D will have two questions from the respective sections of the syllabus and will carry 15% of the total marks (12 marks) each. Section E will consist of 10 short answer type questions, which will cover the entire syllabus uniformly and will carry 40% of the total marks (32 marks) in all.

(B) Instructions for the Candidates:

1. Candidates are required to attempt one question each from the section A, B, C and D of the question paper and the entire section E.
2. Use of non-programmable scientific calculator is allowed.

SECTION A

Database V/s File system, Architecture of DBMS(External, Conceptual, Internal), Data Independence (Logical Physical) DBA and his responsibility, DBMS structure (DDL Compiler, Data manager, File manager, Disk Manager, Query Processor).

SECTION B

Entity, Entity Set, Attributes Keys(Primary, Secondary, Candidate, Super, Alternate), Mapping cardinalities, N-array relationships, E-R- Diagram, Hierarchical Model ,Relational Model, Network Model, Object oriented Model, Mapping of E-R diagrams to tables.

SECTION C

Anomalies in Design, Functional Dependency, Logical implications, Closure of FD, Canonical Form, Full and Partial FD, Prime and Non-prime attributes, 1-NF, 2-NF, 3-NF, BCNF, Decompositions, lossless and Dependency preservance.

SECTION D

Integrity rules (Entity integrity, Referential Integrity) Union, Difference, Intersection, Cartesian product Division, Projection, Selection, Joins.

Type calculus, Type calculus Formula, Domain calculus, SQL, Basic data retrieval, Data manipulation, views.

Recovery techniques, check points, concurrency control, View & conflict serializability, Lock, based concurrency control, strict two phase locking, multiple granularity locking, Time stamp based concurrency control.

References:

1. Bipin C. Desai, "An Introducation to Database Systems", Galgotia Publications Nt. Ltd.
2. Elmasri Navathe, "Fundemental of Database Systems", Pearson Edition.
3. C.J. Date, "An Introduction to Database System"(7th Edition) Pearson Edition.

PGDCA-150 P SOFTWARE LAB (PROGRAMMING IN C)

Maximum Time : 3 Hrs.

University Examination : 70 Marks

Total Marks : 100

Continuous Internal Assessment : 30 Marks

Minimum Pass Marks : 40%

This laboratory course will mainly comprise of exercises on what is learnt under paper :
PGDCA-130 (Computer Programming using C).

PGDCA-160 P SOFTWARE LAB (DBMS)

Maximum Time : 3 Hrs.

University Examination : 70 Marks

Total Marks : 100

Continuous Internal Assessment : 30 Marks

Minimum Pass Marks : 40%

Programming in SQL.