PANJAB UNIVERSITY, CHANDIGARH

FACULTY OF ENGINEERING AND TECHNOLOGY

Scheme of Examination and Syllabi for
Bachelor of Engineering MBA (Information Technology)
Third – Tenth Semesters
(Academic Session 2012 – 2013)
### Second Year - Third Semester

<table>
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<tr>
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<td>Analog &amp; Digital Comm.</td>
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### Second Year - Fourth Semester

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*Note: Marks refer to mid semester evaluation and end semester evaluation*
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*- Note: Marks refer to mid semester evaluation and end semester evaluation

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<td>Accounting for Managers</td>
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**Elective-I* Choose any one from the following:**
- Object Oriented Analysis and Design
- Artificial Intelligence
- Mobile Computing
### OPTION - 1

<table>
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### OR OPTION - 2

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<td>Industrial Training</td>
<td>Six months</td>
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<td>600</td>
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Student can exercise **option 1 or option 2** according to the following:

A student may opt for one semester training in lieu of subjects of 8th Semester. The marks for six months training will be equal to the total marks of 8th Semester study.

* Students who do not go for 6 months training will study the full subjects of 8th semester. These students will go for 6-8 weeks training after the 8th semester.
### Fifth Year - Ninth Semester

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<tr>
<td>IBM-901</td>
<td>Quantitative Techniques for Managers (Compulsory)</td>
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<td>IBM-902</td>
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<td>IBM-903</td>
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**STUDENTS HAVE TO SELECT 3 SUBJECTS FROM THE MAJOR SUBJECT AND 2 FROM MINOR ALONG WITH TWO COMPULSORY SUBJECTS. (TOTAL: SEVEN SUBJECTS)**
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STUDENTS HAVE TO SELECT 2 SUBJECTS FROM THE MAJOR SUBJECT AND 2 FROM MINOR IN 10th semester ALONG WITH ONE COMPULSORY SUBJECT. [TOTAL: FIVE SUBJECTS]
SYLLABUS FOR B.E. M.B.A(I.T.) THIRD SEMESTER

Paper Title: Engineering Mathematics-III

Paper Code: AS301  Max. Marks (Univ. Exam): 50  Time: 3 Hours
Credits : 04  Max. Marks (Int. Exam): 50  Total Lectures: 45

L  T  P   3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Sequences and Series: (08)

Linear Algebra: (07)
Concept of linear independence and dependence, Rank of a matrix: Row – Echelon form, System of linear equations: Condition for consistency of system of linear equations, Solution by Gauss elimination method. Inverse of a matrix: Gauss – Jordan elimination method (Scope as in Chapter 6, Sections 6.3 – 6.5, 6.7 of Reference 1).
Eigen values, eigen vectors, Cayley – Hamilton theorem (statement only). Similarity of matrices, Basis of eigenvectors, diagonalization (Scope as in Chapter 7, Sections 7.1, 7.5 of Reference 1).

Part-B

Complex Functions: (08)
Definition of a Complex Function, Concept of continuity and differentiability of a complex function, Cauchy – Riemann equations, necessary and sufficient conditions for differentiability (Statement only). Study of complex functions: Exponential function, Trigonometric functions, Hyperbolic functions, real and imaginary part of trigonometric and hyperbolic functions, Logarithmic functions of a complex variable, complex exponents (Scope as in Chapter 12, Sections 12.3 – 12.4, 12.6 – 12.8 of Reference 1).
Laurent Series of function of complex variable, Singularities and Zeros, Residues at simple poles and Residue at a pole of any order, Residue Theorem (Statement only) and its simple applications (Scope as in Chapter 15, Sections 15.1 – 15.3 of Reference 1).(07)
Conformal Mappings, Linear Fractional Transformations (Scope as in Chapter 12, Sections 12.5, 12.9 of Reference 1).

References:
Paper Title: Analog and Digital Communication

Paper Code: IT322  Max. Marks (Univ. Exam): 50  Time: 3 Hours
Credits : 04  Max. Marks (Int. Exam): 50  Total Lectures: 45
L T P   3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Amplitude Modulation & Demodulation and Systems (08)

Frequency Modulation & Demodulation and Systems (07)
Principles and generation of FM and PM signals, FM Transmitter and FM receiver with various stages

Pulse Modulation & Demodulation (08)
Principles, generation and detection of PAM, PWM, PPM & PCM signals, noise in pulse modulation system, companding, delta modulation, adaptive delta modulation systems.

Part-B

Digital modulation techniques (07)
PSK, FSK, MSK, QAM. Error calculations for PSK, FSK, MSK, QAM, Shannon’s limit, Signal to Noise Ratio

Multiplexing and Multiple Access (07)
Allocation of communication Resources, FDM/FDMA, TDM/TDMA, CDMA, SDMA, Multiple Access Communications and Architecture, Access Algorithms.

Spread Spectrum Techniques (08)
Spread Spectrum Overview, Pseudonoise Sequences, Direct Sequence and Frequency Hopped Systems, Synchronization of DS and FH systems, Jamming Considerations, Commercial Applications

Books Recommended:
7. Electronic Communications by Dennis Roddy and John Coolen (PHI), Edi 4th.

Paper Title: Analog and Digital Communication (Practical)

Paper Code: IT 372  MM: 50  Credits: 2

1. To measure the modulation Index of AM signals using Trapezoidal Method.
2. To study the voltages and waveforms of various stages of an AM Superheterodyne Receiver.
3. To measure the sensitivity and selectivity of a Superheterodyne Radio Receiver.
4. To measure the fidelity of an AM Superheterodyne radio Receiver.
5. To study DSB/SC AM signal and its demodulation using Product Detector Circuit  
   (i) with dedicated wire  
   (ii) with antenna
6. To study the Frequency modulation and Demodulation circuits.
7. To study the Pulse Code Modulation (PCM) and de-modulation circuits.
8. To study the Time Division Multiplexing (TDM) and De-multiplexing circuits.
9. To study delta and Sigma Delta modulation, demodulation circuits.

Paper Title: Organization Behavior (Theory)

Paper Code: IBM- 301  Time: 3 Hours

Course Duration: 45 Lectures of one hour each.

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Internal Assessment: 50  External Assessment: 50  Credits:3

Part-A


Perception: Factors Influencing perception- perceptual selectivity Linkage between perception and Individual decision making-ethics in decision making.
Personality and Emotional Quotient (EQ): The meaning of personality, its determinants-personality Traits; The big five model, Emotional quotient.

Motivation & Morale: Concepts to Applications.


Part-B


Power & Politics: Definitions of Power-Distinction between Power and Authority-Bases of Power-Power Structure and Block, Impression management-political behavior in organizations.

Conflict & Inter Group Behaviour & Collaboration: Sources of Conflict, Intra-individual Conflict, Interpersonal Conflict, Inter-group behavior and Conflict, Organizational Conflict, Negotiations-Approaches to Conflict Management-Collaboration.


References
1. Behavior in Organizations ,Greenberg, Baron , PHI
3. Organization Behavior ,Fred Luthans , TMH
Paper Title: Object Oriented Programming

Paper Code: IT324
Credits: 04
Max. Marks (Univ. Exam): 50
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45

L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Principles of Objected Oriented Programming (03)
Advantages of OOP, comparison of OOP with Procedural Paradigm

C++ Constructs (03)
Tokens, Expressions and control structures, various data types, and data structures, Variable declarations, Dynamic Initializations, Operators and Scope of Operators, Typecasting, Unformatted and formatted console I/O Operations

Functions (05)
Classes and Objects: Prototyping, Referencing the variables in functions, Inline, static and friend functions. Memory allocation for classes and objects. Arrays of objects, pointers to member functions.

Constructors and Destructors (05)
Characteristics and its various types, Dynamic Constructors, Applications, Order of Invocation, C++ garbage collection, dynamic memory allocation.

Polymorphism (05)
Using function and Operator overloading, overloading using friend Functions, type conversions from basic data types to user defined and vice versa.

Part-B

Inheritance (06)
Derived classes, types of inheritance, various types of classes, Invocation of Constructors and Destructors in Inheritance, aggregation, composition, classification hierarchies, metaclass/abstract classes.

Pointers (05)
Constant pointers, Use of this Pointer, Pointer to derived and base classes, virtual functions, Bindings, Pure virtual Functions and polymorphism

I/O Operations and Files (04)
Classes for files, Operations on a file, file pointers
Generic Programming With Templates (06)
Definition of class template, Function Templates, Overloading Template Functions, Class templates and member functions templates with parameters, Standard C++ classes, persistent objects, streams and files, namespaces, exception handling, generic classes, standard template library: Library organization and containers, standard containers, algorithm and Function objects, iterators and allocators, strings, streams, manipulators, user defined manipulators and vectors

Introduction: (03)
Object Oriented System, Analysis and Design.

Books Recommended
1. Object Oriented Programming with C++ by Bala Guruswamy, TMH, Edi 2nd.

Reference Books

Paper Title: Object Oriented Programming (Practical)

Paper Code: IT 374 MM: 50 Credits: 2

List of Experiments:
1. Implementation of Functions, Classes and Objects
2. Constructors and Destructors
3. Operator Overloading and Type Conversion
4. Inheritance and Virtual Functions
5. Files
6. Exception Handling and Generic Programming
Paper Title: Digital Electronics

Paper Code: IT325  
Credits : 04  
Max. Marks (Univ. Exam): 50  
Max. Marks (Int. Exam): 50  
Time: 3 Hours  
Total Lectures: 45  
L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Introduction  

Number Systems and Codes  
Decimal, Binary, Hexadecimal, Octal’s complement, 2’s complement, addition and subtraction, weighted binary codes, Error detecting codes, Error correcting codes, Alphanumeric codes.

Counters & Shift Registers  
Ripple Counters, Design of Modulo-N ripple counter, Up-Down counter, design of synchronous counters with and without lockout conditions, design of shift registers with shift-left, shift-right & parallel load facilities, Universal shift Registers.

Part-B

Data Converters  
Sample & Hold switch, D/A converters: weighted type, R-2R Ladder type; A/D Converters: Counter-Ramp type, Dual Slope Type, Successive approximation type, flash type; Specifications of ADC & DAC

Digital Logic families  
Characteristics of digital circuits: fan in, fan-out, power dissipation, propagation delay, noise margin; Transistor-transistor Logic(TTL), TTL NAND Gate with active pull up, its input and output Characteristics, Types of TTL Gates (Schottky, standard, low power, high speed). Emitter Coupled Logic(ECL), ECL gate, its transfer characteristics, Level translation in ECL & TTL, MOS Gates, MOS Inverter, CMOS Inverter, Rise & Fall time of MOS & CMOS gates, Interfacing TTL & CMOS Circuits, Comparison of Characteristics of TTL, ECL, MOS & CMOS logic circuits, Tristate Logic & its applications.

Semiconductor Memories & Programmable Logic  
ROM, PROM, EPROM, EEPROM; RAM: Static RAM, Typical Memory Cell, Memory Organisation, Dynamic RAM cell, Reading, & Writing Operation in RAM, PLA, PAL & FPGA.
Books Recommended:

4. Integrated Electronics by Millman & Halkias, (Tata McGraw-Hill), Edi 1st
5. Digital System Principles & Applications by R J Tocci (PHI), Edi 8th.

Paper Title: Digital Electronics (Practical)

Paper Code: IT 375

MM: 50

Credits: 2

Note: Do any eight experiments.

1. To Study data sheets and truth tables of AND, OR, NOR, NAND, NOT and XOR Gates.
2. To verify the truth tables of RS, D, JK and T Flip Flops
3. To fabricate and test the truth table of half/full adder.
4. To design and implement a Modulo-N Counter
5. To Design and implement a Universal shift register
8. To convert 8 bit Digital data to Analog value using DAC
9. To convert Analog value into 8 bit Digital data using ADC
10. To design and fabricate the given sequential circuits using Flip-flops as memory elements.
SYLLABUS FOR B.E.M.B.A (I.T.) FOURTH SEMESTER

Paper Title: IT for Managers

Paper Code: IBM- 401
Credits : 03
Max. Marks (Univ. Exam): 50
Max. Marks (Int. Exam): 50
L T P 3 0 0
Time: 3 Hours
Total Lectures: 45

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part A
Information Technology (IT) : IT and society, IT infrastructure in India vis-à-vis developed nations (Telecommunication , Internet reach, PC, Broadband ,Mobile Phones ), IT applications in Healthcare & Education

System Investigation & Analysis , Networking: System Analysis & Design , Symbols used in modeling a business process , modeling different business processes ,Networking concepts: Ethernet ,IP addressing, Functioning of Routers, Bridges, hubs and switches in a network, Telecommunication (GSM, CDMA , Wireless and other new technologies)

Internet & Intranet : Functioning of Internet, Encryption & Digital signatures, Firewalls, Fraud on the Internet ,Virus , Hacking & Denial of Service attacks, Intellectual Property Protection on the Internet, Intranet & security

Part B
E-Commerce & E-Governance: E-Commerce models , Intermediaries in E-Commerce, study of successful models like E-Choupal ,E-Payments (E-Cash, E-Wallets) and major players in the area, Online Shopping, Revenue models for Online Shopping Portals, Web Auctions : study of portals like EBay, dealing with E-Waste, E-Governance in India ,study of implementation of E-Governance in different states in India, scope for further improvement

New Technologies shaping the IT field: Study of new technologies like RFID, WiMAX, Bluetooth, GPS, smart cards etc and their implementation case studies
Online Banking: infrastructure and implementation of Online Banking in India, intermediaries in online banking
Cloud Computing : The business model of cloud computing, advantages and drawbacks of adopting the cloud computing framework.

References:
1. Business Data Communications & Networking , Jerry Fitzgerald , Alan Dennis, John Wiley
2. Information Technology for Management : Improving Performance in the Digital Economy , Efraim Turban , Linda Volonino , John Wiley
Paper Title: Data Structures and Algorithms

Paper Code: IT421
Credits: 04

Max. Marks (Univ. Exam): 50
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Introduction: (01)
Introduction to data structures; Introduction to Algorithms Complexity;

Arrays, Stacks & Queues: (08)
Concepts; Basic operations & their algorithms: Transverse, Insert, Delete, Sorting of data in these data structures; Prefix, Infix, Postfix Notations;

Lists: (10)
Concepts of Link List and their representation; Two way lists; Circular link list; Basic operations & their algorithms: Transverse, Insert, Delete, Searching and Sorting of data in List; Storage Allocation & Garbage Collection; Linked stack and queues; Generalized List; sparse matrix representation using generalized list structure;

Part-B

Trees: (08)
Binary Trees and their representation using arrays and linked lists; Trees and their applications; Binary tree transversal; Inserting, deleting and searching in binary trees; Heap & Heap Sort; General Trees; Thread binary tree; Height balance Tree (AVL); B-Tree.

Graphs and their applications: (08)
Graphs; Linked Representation of Graphs; Graph Traversal and spanning forests; Depth first search; Breadth first search.

Sorting & Searching: (10)
Insertion sort; Selection sort; Merging; Merge sort; Radix sort; Sequential & Binary Search; Indexed Search; Hashing schemes; Binary search Tree.

Books Recommended:
Paper Title: Data Structures and Algorithms (Practical)

Paper Code: IT471                  MM: 50                Credits: 2

List of Programs:

1. **Implementation of Array Operation**: Traversal, Insertion & Deletion at and from a given location; Sparse Matrices; Multiplication, addition.
2. **Stacks**: Implementation of Push, Pop; Conversion of Infix expression to Postfix, Evaluation of Postfix Expressions.
3. **Queues**: Adding, Deleting Elements; Circular Queue: Adding and Deleting elements.
4. **Implementation of Linked Lists**: Inserting, deleting, inverting a linked list. Implementation of stacks and queues using linked lists; Polynomial addition, Polynomial multiplication.
6. **Graphs**: BFS & DFS
7. Implementation of sorting and searching algorithms.
8. **Hash Tables Implementation**: Searching, inserting and deleting, searching & sorting techniques.

Paper Title: Computer Networks

Paper Code: IT422                  Max. Marks (Univ. Exam): 50          Time: 3 Hours
Credits : 04                      Max. Marks (Int. Exam): 50          Total Lectures: 45
                                      L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

**Part-A**

**Introduction:**
Basic concepts of computer networks, switching; multiplexing; Network Hardware: LAN, MAN, WAN, Wireless networks, Internet; Network Software: Layer, Protocols, interfaces and services; Reference Model: OSI/TCP/IP and their comparison.

**Physical Layer:**
Data Link Layer: (09)
Framing; Error control; Error correction & Detection; sliding window protocols (one bit, Go back n, selective repeat); Examples of DLL Protocols-HDLC, SLIP; Medium Access Sub layer: Channel Allocation, MAC protocols -ALOHA, CSMA protocols, Collision free protocols, Limited Contention Protocols, Wireless LAN protocols, IEEE 802.3, 802.4, 802.5 standards and their comparison. Bridges: Transparent, source routing, remote.

Part-B

Network Layer: (09)
Design issues, routing algorithms (shortest path, flooding, flow based, distance vector, hierarchical, broadcast, multicast, for mobile hosts). Congestion control algorithms (Leaky bucket, Token bucket, Choke, Packet, Load shedding).

Transport Layer: (06)
Addressing, establishing and releasing connection, flow control & buffering, multiplexing, crash recovery, Internet Transport protocol (TCP and UDP).

Application Layer: (05)
Network Security; Domain Name System; Simple Network Management Protocol; Electronic Mail.

Books Recommended:
3. Internet working with TCP/IP by Douglas E. Coomer,(PHI), Edi 3rd.

Paper Title: Computer Networks (Practical)

Paper Code: IT472 MM: 50 Credits: 2

Practicals based on theory.
1. To familiarize with the various basic tools (crimping, krone etc.) used in establishing a LAN.
2. To familiarize with switch (manageable & unmanageable), hub, connecters, cables (cabling standards) used in networks.
3. To familiarize with routers & bridges.
4. To use some basic commands like ping, trace-root, ipconfig for trouble shooting network related problems.

5. To use various utilities for logging in to remote computer and to transfer files from/to remote computer.

6. To develop a program to compute the Hamming Distance between any two code words.

7. To develop a program to compute checksum for an ‘m’ bit frame using a generator polynomial.

8. To develop a program for implementing/simulating the sliding window protocol.

9. To develop a program for implementing/simulating a routing algorithm.

10. To study various IEEE standards (802.3, 802.4, 802.5, 802.11)

11. To develop a program for implementing/simulation the ALOHA protocol

Paper Title: Microprocessor (Theory)

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Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Microprocessor Architecture and Microcomputer Systems: (06)
Microprocessor Architecture, The 8085 MPU: Block Diagram, Pin Diagram, Address/Data Buses, Concept of demultiplexing of Buses, Control and status signals, Registers, Ports, Flags, Instruction Decoding and Execution, memory Interfacing.

Interfacing I/O Devices (06)
Basic Interfacing Concepts, Interfacing Output Displays, Interfacing Input Devices, Memory-Mapped I/O

Programming the 8085: (07)

Programming Techniques with Additional Instructions: (06)
Part-B

Counters and Time Delays: (06)
Counters and Time Delays, Hexadecimal Counter, Modulo Ten, Counter, Generating Pulse Waveforms, Debugging Counter and Time-Delay Programs.

Stack and Subroutines: (04)
Stack, Subroutine, Conditional Call and Return Instructions.

Interrupts: The 8085 Interrupt, 8085 Vectored interrupts. (03)

General –Purpose Programmable Peripheral Devices: (07)
Block Diagram, Working and Control word of: The 8255A Programmable Peripheral Interface, The 8259A Programmable Interrupt Controller, Programmable communications interface 8251.

Books Recommended
1. Microprocessor Architecture, Programming and Applications with the 8085 by Ramesh S.Gaonkar, PHI, Edi 3rd

Reference Books:
1. Advanced Microprocessors & Interfacing by Badri Ram, Tata McGraw Hill, Edi 1st.
3. Microprocessors and Interfacing programming and Hardware by Douglas V. Hall, TMH, Edi 2nd

Paper Title: Microprocessor(Practical)

Paper Code: IT 473
MM: 50
Credits: 2

1. Familiarization of 8085 kits.
2. Verification of arithmetic and logic operations using above kits.(At least 5 programs)
3. Development of interfacing circuits of various control applications based on 8085.
4. Application of assembly language using 8085 instructions set to develop various programs.
5. Applications of data movement instructions to develop relevant programs.
Paper title: Computer Architecture & Organization

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<th>Max. Marks (Univ. Exam): 50</th>
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Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

**Part-A**

**Design Methodology** (04)
System design, Design levels- Gate level, Register level, Processor level.

**Basic Computer Organization & Design** (08)
Instruction codes, common bus system, computer instruction, Design of basic computer, Design of accumulator logic.

**Control Design** (08)
Basic concepts, Hardwired control, Micro programmed control, Design of control unit.

**Central Processing Unit** (08)

**Part-B**

**Input-Output Organization** (06)
I/O interface, Modes of transfer, Priority interrupts, DMA, I/O processor.

**Memory Organization** (06)
Memory hierarchy, Main memory, Auxiliary memory, Associative memory. Cache memory, virtual memory, Memory management H/W.

**Parallel Processing** (05)
Introduction, Multiprocessors, Interconnection structure.

**Books Recommended**
2. Computer System Architecture by Morris Mano, Edi 3rd PHI

**Reference Books**
SYLLABUS FOR B.E.M.B.A (I.T.) FIFTH SEMESTER

Paper title: Data Base Management Systems

Paper Code: IT521
Credits : 03
Max. Marks (Univ. Exam): 50
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Data Base Concept: (04)
Data Base Vs file oriented approach, Basic DBMS terminology, Data independence, General Architecture of a Data Base Management Software, Components of DBMS.

Data Base Design: (05)
Introduction to Data Models, Entity Relationship Model, Entities, Attributes, E-R Diagrams, Conceptual Design of a relational data base model.

Data Normalization: (06)

Transaction Processing Concepts: (06)
Schedules and recoverability, serializability, locking techniques, timestamp ordering, granularity, multiversion concurrency control.

Part-B

Structured Query Language (SQL): (08)
Introduction to SQL, Data types, Querying database tables, Conditional retrieval of rows, Working with Null Values, Matching a pattern from a table, Ordering the Result of a Query, Aggregate Functions, Grouping the Result of a Query, Insert statement, Update & Delete statement, Alter & Drop statements, Querying Multiple Tables: Joins, Equi Joins, Inner Joins, Outer Joins, Self Joins; SET Operators: Union, Intersect, Minus; Nested Queries. Functions: Arithmetic, Character, Date and General Functions; Group Functions

Data Manipulation and Control: (08)
Data Definition Language (DDL), Creating Tables, Creating a Table with data from Another table, Inserting Values into a Table, Updating Column(s) of a Table, Deleting Row(s) From a Table, Dropping a Column, Introduction to VIEWs, Manipulating the Base table(s) through VIEWs, Rules of DML Statements on Join Views, Dropping a VIEW, Inline Views, Materialized Views. Database Security and Privileges, GRANT Command, REVOKE Command, COMMIT and ROLLBACK.
PL/SQL:  

Relational Queries:  
Relational Algebra and Calculus, Preliminaries, Relational Algebra, Relational Calculus, Expressive Power of Algebra and Calculus, Points to review.

Books Recommended:

1. An Introduction to Database Systems by C.J. Date, Pearson, Edi 8th.

Reference books:

5. Introduction to Data Base Systems by Desai, Bipin C. (Galgotia Publications), Edi 3rd.

Paper title: Data Base Management Systems (Practical)

Paper Code: IT 571  MM: 50  Credits: 2

Practical based on Theory.
Paper Title: Computer Graphics

Paper Code: IT522  Max. Marks (Univ. Exam): 50  Time: 3 Hours
Credits : 04  Max. Marks (Int. Exam): 50  Total Lectures: 45
L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Introduction to computer graphics (07)
Applications of computer graphics, Picture representation, color table, Video Display Devices- Raster Scan Systems, Random Scan Systems, Input Devices, Output primitives

Raster Scan Graphics: (07)
Scan conversion, Frame buffer, Bresenham's line and circle drawing algorithms, Scan-Line Polygon Fill Algorithm, Inside-Outside Tests, Boundary-Fill Algorithm, Flood-Fill Algorithm, Antialiasing and Halftoning, Character Generation, Attributes of lines

Segments: (06)
Segments table, creating deleting and renaming segments, visibility, image transformations.

Transformations: (07)
Geometric Transformations: Matrices, Translation, Scaling, Rotation, Homogeneous Coordinates, Composite Transformation Matrix, Coordinate Transformation, Rotation about an arbitrary point, Inverse Transformations, Other transformations.

Part-B

Windowing and clipping: (08)

Three Dimension: (05)
3D geometry, 3D primitives, 3D transformations, rotation about arbitrary axis, parallel projection, perspective projection, viewing parameters, conversion to view plane coordinates

Hidden Line and surface: (05)
Back face removal algorithms, hidden line methods

Text Book:
Reference Books:

Paper Title: Computer Graphics (Practical)
Paper code: IT 572 MM: 50 Credits: 2
Practical based on theory.

Paper title: Operating Systems

Paper Code: IT523 Max. Marks (Univ. Exam): 50 Time: 3 Hours
Credits : 04 Max. Marks (Int. Exam): 50 Total Lectures: 45
L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A
Basic Functions and Concepts of Operating Systems: (05)
Concept of an operating systems, batch system, Multi-programmed, Time sharing, Personal Computer System, Parallel system, Real time system, General system Architecture.

Features and Objectives of Operating Systems: (11)
System components, operating system services, System calls, System Programs, System Structure, System design and implementation. Concept of process, process states, process state transition, process control block, operations of processes, concurrent processes, deadlocks, scheduling algorithms, scheduling criteria, Process Synchronization.

Memory Management: (06)
Logical and physical address space, storage allocation and management techniques, swapping, concepts of multi programming, paging, segmentation, virtual storage management strategies, Demand Paging, Page Replacement Algorithms, Thrashing.
Part-B

**Information Management:** (06)
File concept, Access method, Directory structure, Protection File system structure, Allocation methods, Free space management, Directory implementation, Disk structure, Disk Scheduling, Disk management, Swap space management.

**Distributed-System Structures:** (06)
Network operating system, Distributed operating systems, Remote services, Robustness, Design Issues.

**Distributed file systems and Distributed Coordination:** (06)

**Case Studies:** (05)
Unix O.S. Architecture, Operating system services, user perspective, representation of files in Unix system processes and their structure, Input-output system, Memory management, Unix shell, history and evolution of Unix system.

**Books Recommended:**


**Reference books:**


**Paper title: Operating Systems (Practical)**

Paper Code: **IT 573**  MM: 50  Credits: 2

1. Installation of the Linux operating system
2. Working with text editor ‘vi’
3. Using basic commands-man,who,more,pipe,finger,cat,redirect,ls,cp,mv,rm.
4. Working with directory and plain files-pwd,cd,mkdir,rmdir,lp,wc,date,cal,sort,diff,uniq and grep commands.
5. Using miscellaneous commands-head,tail,cut,copy,paste,spell,find and bc.
6. Working with shell scripts under Korn Shell and using shell variables, print, chmod and calendar commands.
7. Additional features of Korn shell such as profile, kshrc file, history, read and command line editing commands, aliases and special characters in print command
8. Using quotes, relational operators, command substitution, arithmetic functions, shell control statements such as for-in, if-then-elseif-else, while, case, date and script.
9. Working under the Bourne shell-shell scripts, control statements such as test, for, for in, if-then-else-fi, -if-then-elif-fi, while, until, case, relational operators and expressions.

Paper Title: Human Resource Management

Paper Code: IBM-502  Max. Marks (Univ. Exam): 50  Time: 3 Hours
Credits : 03  Max. Marks (Int. Exam): 50  Total Lectures: 45

L  T  P  3 0 0

Part-A


Job analysis : Methods - IT and computerized skill inventory - Writing job specification - HR and the responsive organization.

Recruitment and selection process : Employment planning and forecasting – Building employee commitment : Promotion from within - Sources, Developing and Using application forms - IT and recruiting on the internet.

Employee Testing & selection : Selection process, basic testing concepts, types of test, work samples & simulation, selection techniques, interview, common interviewing mistakes, Designing & conducting the effective interview, small business applications, computer aided interview.

Part-B

Training & Development: Orientation & Training: Orienting the employees, the training process, need analysis, Training techniques, special purpose training, Training via the internet Performance appraisal: Methods - Problem and solutions - MBO approach – The appraisal interviews - Performance appraisal in practice.

Managing careers: Career planning and development - Managing promotions and transfers.

motivation - incentives for operations employees and executives - Organization wide incentive plans - Practices in Indian organizations.


References:

Paper Title: Marketing Management

Paper Code: IBM-501
Max. Marks (Univ. Exam): 50
Credits : 03
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 0 0

Part A
Introduction to Marketing: Definition; Scope and Importance of Marketing; Key Customer Markets; Concepts/Philosophies of Marketing; Holistic Marketing Concept; Marketing Tasks; Marketing Mix

Marketing Environment: Marketing Environment; New Marketing Realities; New Consumer Capabilities; Demographic Environment; Social-Cultural Environment; Natural Environment; Technological Environment and Political-Legal Environment; SWOT analysis.

Analyzing Markets: Marketing Research Process; Sources of data collection; factors influencing consumer behavior; buying decision process; post-purchase behavior; Organizational Buying; Stages in the Buying Process.

Market Segmentation: Levels of market segmentation; segmenting consumer markets; Niche Marketing; segmenting business markets; Michael Porter’s five forces model; Analyzing competitors; strategies for market leaders; Targeting and Positioning.

Part B
Product Decisions: Product characteristics; classifications; differentiation; packaging and labeling; Product Life Cycle.

Pricing Strategies: Understanding Pricing; Setting the Price; Initiating and Responding to Price Changes; Reactions to Competitor’s Price Changes.
Marketing Channels: Marketing Channels; Role of Marketing Channels; Identifying Major Channel Alternatives; Types of Intermediaries; Channel-Management Decisions, Retailing, Wholesaling.

Marketing Communication: The Role of Marketing Communications; Communications Mix-Advertising, Sales Promotion, Public Relations and Publicity, Events and Experiences, Direct and Interactive Marketing, Personal Selling.

References:
1. Principles of Marketing, Philip Kotler, Pearson
2. Marketing Management, R. Saxena, TMH

Paper Title: Multimedia Systems

Paper Code: IT525
Credits: 03
Max. Marks (Univ. Exam): 50
Max. Marks (Int. Exam): 50
Total Lectures: 45
L T P 3 0 0

Time: 3 Hours

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part A

Introduction: (05)

Multimedia Technology: (06)

Storage Media: (05)
Magnetic and Optical Media, RAID and its levels, Compact Disc and its standards, DVD and its standards, Multimedia Servers.

Audio: (05)
Part-B

Image, Graphics and Video:

Video and Audio Compression:

Multimedia Communication:
Building Communication network, Application Subsystem, Transport Subsystem, QOS, Resource Management, Distributed Multimedia Systems

Books Recommended:


Reference Books:

SYLLABUS FOR B.E. M.B.A (I.T.) SIXTH SEMESTER

Paper Title: Wireless Communication

Paper Code: IT621
Credits : 04
Max. Marks (Univ. Exam): 50
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Introduction
Evolution of Mobile Communication Systems, Paging systems, cordless telephone systems, cellular telephone systems, comparison of common wireless communication systems.

System Design Fundamentals
Frequency reuse, Channel assignment strategies, handoff strategies, interference, improving coverage and capacity in cellular systems, mechanism for capacity improvement-cell splitting, cell sectoring and microcell zone concept, modulation techniques.

Wireless Systems
GSM, GSM reference architecture and GSM security architecture, CDMA digital cellular standard, IS-95 system.

Part-B

Channel Impairment Mitigation Techniques
Introduction, Power control, Diversity Techniques: Frequency Diversity, Time Diversity, Space Diversity, Path Diversity, Channel Equalization, Rake receiver, Channel coding and interleaving.

Multiple Access Techniques
Simplex, Duplex, Time Division Duplex, Frequency Division Duplex FDMA, TDMA, CDMA, SDMA, OFDM, Hybrid Multiple Access.

Migration to 3G technologies:
WiFi, WiMax, EDGE, Bluetooth, CDMA-2000.

Books Recommended:


**Paper Title: Wireless Communication (Practical)**

Paper code: **IT 671**  
MM: 50  
Credits: 2  

Practical based on theory.

**Paper title:  Software Engineering**

Paper Code: **IT622**  
Max. Marks (Univ. Exam): 50  
Max. Marks (Int. Exam): 50  
Time: 3 Hours  
Total Lectures: 45  
L T P 3 1 0

**Note:** Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

**Part-A**

**Software Evolution**  
(06)

**Project Management Concepts**  
(04)

**S/W Project Planning**  
(04)
Project estimation, Empirical Estimation Models, COCOMO Model.

**Risk Management**  
(04)
Reactive Vs Proactive risk strategies, s/w Risks, Risk Identification, Projection, Risk Mitigation, Monitoring and Management.

**S/W Quality Assurance**  
(06)
S/w quality concept, SQA- S/w quality assurance activities, reviews, SQA plan, ISO 9000 Quality standards, ISO approach to quality assurance systems.
Part-B

S/W Configuration Management (05)
Baselines, S/w configuration Items, SCM process, Version control, Change control.

Design (06)
Design Concepts and principles, Modular Design, Design Methods.

S/W Testing Methods (06)
Testing Fundamentals, test case design, White box testing, Black Box testing, Testing Strategies, Verification & validation, Unit, Integration, Validation, System Testing.

Computer aided S/W Engineering (04)
CASE, Building blocks For Case, Integrated Case Environment.

Books Recommended

Reference Books

Paper title: Web Technologies

Paper Code: IT623 Max. Marks (Univ. Exam): 50 Time: 3 Hours
Credits : 03 Max. Marks (Int. Exam): 50 Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Internet Basics: (07)
Internet; Communication on the Internet; Internet services; types of accounts; Internet Domains; NIC; IP addresses; Web Servers; review of TCP/IP; HTTP; telnet; ftp; WWW concepts; web site creation concepts; web commerce; internet telephony.

HTML: (08)
HTML basics; HTML tags; text formatting; text styles; lists: ordered, unordered and definition lists; layouts; adding graphics; tables; linking documents; images as hyperlinks; frames and layers; DHTML, style sheets.
Java Script: (06)
Advantages of JavaScript; writing JavaScript into HTML; JavaScript data types, variables, operators and expressions; arrays and functions in JavaScript; condition checking; loops; dialogue boxes.

Part-B

Advanced Java Script: (08)
JavaScript document object model; JavaScript assisted style sheets; events handling in JavaScript; browser objects; form objects; built-in and user defined objects; cookies.

ASP: (16)
Origin of ASP; how ASP works; ASP Objects, Application object; ASP Error object; Request object; Response object; server object; session object; Scripting objects; Active Server Components; ActiveX Data Objects

Books Recommended:
1. Web Enabled Commercial Application Development Using HTML, DHTML, Java Script, Perl CGI by Ivan Bayross, BPB, Edi 2nd

Paper title: Web Technologies (Practical)

Paper Code: IT 673
MM: 50
Credits: 2
Practical based on theory.
Paper Title: Managerial Economics

Paper Code: IBM-601
Credits: 03
Max. Marks (Univ. Exam): 50
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A
Introduction to Managerial Economics and Demand Concepts: Nature Scope and Importance of Managerial Economics, opportunity costs, incremental principle, time perspective, Equi marginal principles, Individual Demand, Market Demand, Kinds of Demand, Determinants of Demand, Demand Functions and Law of Demand, Income and Price elasticity of demand, substitution effect


Production Function: Concept and types, Returns to Factor and Returns to Scale, Law of Variable Proportions, law of diminishing marginal returns

Cost concepts and Analysis: Concept of Cost, Short run and Long-run Cost Curves, Relationships among various costs

Revenue Curves: Concept and Types.

Part B

Perfect Competition: Characteristics, Equilibrium Price, Profit Maximizing output in Short Run and Long Run, Price Discrimination; Imperfect Competition, Monopolistic Competition, Oligopoly and Barriers to Entry.

Economic Environment of Business- Meaning of GDP, Monetary and Fiscal Policy, Deficit Financing, Inflation, Subsidies, Devaluation of Rupee, Liberalization, Privatization and Disinvestment

References:

1. Managerial Economics, Mote, Paul Gupta, Vikas Publisher, New Delhi
3. Microeconomics, Robert. Pindyck, Daniel Rubinfeld, Pearson
Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

**Part A**
The Contract Act 1872: Introduction: Meaning of contract; Types of contract; Essential elements of a valid contract. Offer: Meaning and Definition of offer; Types; Rules regarding offer; Revocation of offer; Lapse of offer.
Acceptance: Meaning and Definition of acceptance; Rules regarding acceptance; Revocation of acceptance.
Consideration: Definition; Types; Rules; Exceptions
Capacity of Parties: Position of Minor, Person of unsound mind, Persons disqualified by law.
Free consent; Discharge of contract, Remedies for Breach of contract, Contract of Indemnity, Contract of Guarantee

Sales of Goods Act 1930: Meaning; Difference between Sale of Goods and Agreement to Sale, Essentials of Contract of Sale; Difference between Contract of Sale and Hire-Purchase Agreements; Conditions and Warranties; Transfer of property or ownership; Performance of Contract of Sale; Rights of Unpaid Seller; Auction Sale.

The Companies Act, 1956: Definition; Meaning; Features; Types of companies; Incorporation of a company; Memorandum of Association; Articles of Association and Prospectus; Doctrine of Indoor Management; Lifting of Corporate Veil; Registration and Incorporation of a company; Doctrine of Ultravires Transactions; Winding up of company.

**Part B**

Information Technology Act-2000: Objective of the act, documents excluded from the scope of the act, digital signatures, types of digital signatures in India, certifying authorities in India, regulation of certifying authorities, duties of subscribers, offences, appellate tribunal, penalties and adjudication

**References:**
2. An Introduction to Mercantile Laws- N.D. Kapoor, Sultan Chand & Sons
Paper Title: Business Intelligence

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

SECTION – A

Introduction to Business Intelligence:

Basics of Data Integration (Extraction Transformation Loading)
Concepts of data integration, need and advantages of using data integration, introduction to common data integration approaches, introduction to ETL, Introduction to data quality, data profiling concepts and applications.

SECTION – B

Introduction to Multi-Dimensional Data Modeling,
Introduction to data and dimension modeling, multidimensional data model, ER Modeling vs. multi dimensional modeling, concepts of dimensions, facts, cubes, attribute, hierarchies, star and snowflake schema

Basics of Enterprise Reporting
Introduction to enterprise reporting, concepts of dashboards, balanced scorecards, and overall architecture.

Data Mining Functionalities:
Association rules mining, Mining Association rules from single level, multilevel transaction databases, Classification and prediction, Decision tree induction, Bayesian classification, k-nearest neighbor classification

Text Books:

References:

2. Larissa Terpeluk Moss, Shaku Atre : Business Intelligence roadmap by Addison Weseley
3. Cindi Howson : Successful Business Intelligence: Secrets to making Killer BI Applications by Tata McGraw Hill
4. Mike Biere : Business intelligence for the enterprise by Addison Weseley, August 2010

Paper title: Business Intelligence and Software Engineering (Practical)

Paper Code: IT 675 MM: 50 Credits: 2
Practical based on theory.
SYLLABUS FOR B.E. M.B.A (IT) Seventh Semester

Paper Title: Digital Signal Processing

Paper Code: IT701  Max. Marks (Univ. Exam): 100  Time: 3 Hours
Max. Marks (Int. Exam): 50  Total Lectures: 45
L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part - A

Introduction to Digital Signal Processing  (04)
Applications and advantages of DSP. Sampling theorem, concept of frequency in discrete time signals.

Discrete Time Signals and Systems  (08)
Classification of signals, standard signals and classification of discrete time systems. Linear Time Invariant systems and their representation by difference equations and structures.

Z- Transform  (04)
Definition of direct, inverse z-transform and its properties. System function of a LTI system. Inverse z-transform by power series expansion and partial fraction expansion.

Frequency Analysis  (08)
Fourier series and transform of discrete time signals and properties (DTFT). Discrete Fourier Transform and its properties. Fast Fourier Transform algorithms, decimation in time and decimation in frequency algorithms (radix 2).

Part – B

Realization of FIR & IIR Systems:  (04)
Direct forms, cascade and parallel form IIR structures. Direct form, cascade and linear phase FIR structures.

Design of Digital Filters:  (12)
Comparison of Analog and Digital filters, Comparison of IIR and FIR filters. FIR Filters and linear phase requirement. FIR filters design using the window technique. IIR Filters and their design using the impulse invariance technique and bilinear transformation. Finite word length effects.

DSP Processors  (05)
Introduction to DSP Processors, architecture of TMS 320CXX and ADSP 21XX
Books Recommended:


Paper Title: Digital Signal Processing (Practical)

Paper code: IT751  Max. Marks 75  Time: 3Hours

Practical based on theory.

Paper Title: Visual Programming

Paper Code: IT702  Max. Marks (Univ. Exam): 100  Time: 3 Hours
               Max. Marks (Int. Exam): 50  Total Lectures: 45
               L  T  P   3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part – A

Introduction:  (08)

Graphical User Interface Concepts - I:  (05)

Graphical User Interface Concepts - II:  (04)
Menus, Controls: MonthCalendar, DateTimePicker, LinkLabel, ListBox, CheckedListBox, ComboBox, TreeView, ListView, Datagrid, Gridview, TabControl, Multiple Document Interface (MDI) Windows.
Multithreading and Exception Handling: (05)
Thread States, Lifecycle of a Thread, Thread Priorities and Scheduling, Creating and Executing Threads, Thread Synchronization and Class Monitor, Exception Handling.

Part – B

Graphics and Multimedia: (05)

File Processing and Streams: (05)
Data Hierarchy, Files and Streams, Classes File and Directory, Reading and Writing Sequential Access Files, Serialization.

Data Access: (08)
Data Access Techniques, XML, LINQ, SQL, ADO.NET Object Model, LINQ to SQL, ADO.NET and LINQ, LINQ to XML.

Additional Techniques: (05)

Books Recommended:

References:

Paper title: Visual Programming
Paper Code: IT 752 Max. Marks: 75 Time: 3 hours

Practical based on theory.
Paper title: Data Mining and Warehousing

Paper Code: IT703  Max. Marks (Univ. Exam): 100  Time: 3 Hours
Max. Marks (Int. Exam): 50  Total Lectures: 45
L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and Part B.

Part A

Introduction to Data Warehousing (03)
Data Warehousing Definition and characteristics, need for data warehousing, DBMS vs. data warehouse, OLAP

Data Warehousing Components (05)
Overall Architecture, Data Warehouse Database, Sourcing Acquisition, Cleanup and Transformation Tools, Metadata Access Tools, Data Marts, Data Warehouse Administration and Management, Information Delivery Systems.

Mapping the Data Warehouse to a Multiprocessor Architecture (05)
Relational Database Technology for Data warehouse, Database Architectures for Parallel Processing, Parallel RDBMS features, Alternative Technologies, Parallel DBMS Vendors.

Introduction to Data Mining (08)
Functionailities, classification data mining systems, Multidimensional data model, data cubes, Schemas for multidimensional databases, OLAP operations, Data Marts, Metadata.

Part B

Data Preprocessing (06)
Data cleaning, integration and transformation, Data reduction, Discretization and Concept Hierarchy Generation.

Concept Description (06)
Data Mining techniques-Concept description, attribute oriented induction, analytical characterization, mining class comparisons, mining descriptive statistical measures.

Association Rule Mining (08)
Mining single dimension rules from transactional databases, Apriori algorithm, efficiency, mining rules without candidate generation.

Applications and Trends In Data Mining (04)
Commercial Importance of DW, applications of data mining, data mining in business process, Embedded data mining.
Recommended Books

1. Data Mining – Concepts & Techniques; Jiawei Han & Micheline Kamber, Morgan Kaufmann Publishers.
2. Data Warehouseing in the Real World; Sam Anahory & Dennis Murray; Pearson Education
4. Data Warehousing, Data Mining and OLTP; Alex Berson, 1997, McGraw Hill.
Paper title: Accounting For Managers

Paper Code: IBM-701
Max. Marks (Univ. Exam): 100
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and Part B.

Part-A

Accounting and its functions; Basic Accounting Concepts and Accounting Conventions; Accounting Principles; Generally Accepted Accounting Policies (GAAP); Accounting Standards; Branches of Accounting: Financial Accounting; Cost Accounting; Management Accounting; Accounting Equation; Accounting Structure; Types of Accounts.
Rules regarding Journal Entries; Recording of Journal Entries; Ledger Posting; Trial Balance; Preparation of Final Accounts; Trading Account; Profit & Loss Account; Balance Sheet; Treatment of Adjustments into trial balance.
Meaning of Management Accounting; Nature; Scope; Objectives; Functions of Management Accounting; Relationship between Financial and Management Accounting; Tools and Techniques of Management Accounting; Limitations; Meaning of Financial Statement; Importance and Limitations of Financial Statement; Meaning and Objectives of Financial Statement Analysis; Limitation of Financial Analysis.
Ratio Analysis: Meaning of Ratio; Interpretation of Ratios; Significance of Ratio Analysis; Limitations of Ratio Analysis; Classification of Ratio; Analysis of Short-term financial position; Analysis of Long term financial position; Analysis of profitability.

Part-B

Fund Flow Analysis: Meaning and Concept of Funds; Meaning of Fund Flow; Meaning of Fund Flow Statement; Significance; Limitations; Procedure ofPreparing Fund Flow Statement; Schedule Showing Change in working capital; Adjusted Profit & Loss Account; Statement of Sources and Applications of Funds. Treatment of Adjustment;
Cash Flow Analysis: Meaning; Classification of Cash Flow; Comparison between Fund Flow Statement and Cash Flow Statement; Difference between Cash Flow Statement and Cash Budget Limitations; Preparation of Cash Flow Statement (as per AS-3); Treatment of Adjustments.

References:
1. Managerial Accounting, Hilton, Ramesh, Jaidev, TMH
Paper title: Statistics & Research Methodology

Paper Code: IBM-702  Max. Marks (Univ. Exam): 100  Time: 3 Hours
Max. Marks (Int. Exam): 50  Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and Part B

Part A

Introduction to Descriptive Statistics: Types of Data, Measures of Central Tendency; Measures of Dispersion- Range, Quartile Deviation, Mean Deviation, and Standard Deviation, Skewness & Kurtosis.
Probability : Basic probability concepts , Joint probability, Conditional probability, Bayes Theorem, Random Variables and Discrete Probability distributions : Poisson, Binomial and Normal , Normally distributed variables , areas under the standard normal curve
Research Design: Meaning, Characteristics and various concepts relating to research design and classification of research design, Importance.
Measurement and Scaling: Data Types Nominal, Ordinal and Ratio scale; scaling techniques.

Part B

Formulation of Hypothesis: Confidence Intervals, Meaning, Characteristics and concepts relating to testing of Hypothesis (Parameter and statistic, Standard error, Level of significance, type-I and Type-II errors, Critical region, one tail and two tail tests); Procedure of testing Hypothesis. Numerical problems based on chi-square test, Hypothesis tests for one population mean : Z test, t-test, Wilcoxon Signed- Rank test, Inferences for two population means, Mann-Whitney Test, F-test
Data Analysis & Interpretation: Introduction to Multivariate analysis- Multiple and partial correlation, Analysis of Variance (ANOVA)-One way and Two way ANOVA. Introduction to discriminant analysis and Factor Analysis

References:
1. Business Research Methods, William G. Zikmund, Cengage Learning India
2. Business Research Methods, Cooper,D.R.& Schindler, TataMcGraw-Hill
ELECTIVE-I

Paper Title: Object Oriented Analysis And Design

Paper Code: IT704
Max. Marks (Univ. Exam): 100
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and Part B.

Part A

Object Oriented Concepts (02)
Difference between Procedure-Oriented and Object-Oriented Programming, Basic Concepts of Object Oriented Programming, Abstract data types: Object, Classes, Data Abstraction and Encapsulation, Inheritance, Polymorphism.

C++ Programming Language and Functions (05)
Tokens, Keywords, Identifiers, Basic Data Types, User Defined Data Types, Derived Data Type, Variables, Scope Resolution Operator, Memory Management Operator, Manipulators, Type Cast Operator, Operator Overloading, Operator Precedence, Control Structure, Function Prototype, Call by Reference, Call by Value, Inline functions, Default Argument, Function Overloading

Classes and Objects (06)
Structures and Classes, Class declaration, Creating Objects, Assessing Class Members, Class Function Definition, Member Function Definition, Private and Public Member Function, Nesting of Member Functions, Memory Allocation for objects, Array of objects, Objects as Function Arguments.

Inheritance: Extending Classes (05)
Base and Derived Classes, Visibility Modes, Concept of Protected Member, Types of Inheritance- Single Inheritance, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, Hybrid Inheritance.
Operator overloading (05)
Definition, Overloading Unary Operators, Overloading Binary Operators, Type
Conversions- Built in to Class Type, Class Type to Built in Type, One Class
conversion to another Class.

Part - B

Streams and Templates (05)
C++ Streams, C++ Stream Classes, Unformatted I/O Operations, Formatted I/O
Operations, Manipulators.
Templates.

File Streams (05)
Classes for File Stream Operation, Opening and Closing a File, Detecting End-of-File,
File Pointers and Manipulators, Functions- put() and get(), write() and read().

Object Oriented Analysis and Object Oriented Design (08)
Object Oriented Notations and Graphs, Steps in Object Oriented Analysis, Steps in
Object Oriented Design, System analysis, System Design, Object Design

Object Oriented Methodologies (04)
OMT methodology, Object Model, Dynamic Model, Function Model, Relationship
among models, Jacksons Model, Booch’s OOA and OOD approach.

Recommended Books
2. Objecting Modeling and Design, James, Rumbaugh, Michael Blaha, William
Premerlani, Frederick Eddy and William Lorensen, PHI 1998,2nd Ed.
3. Object Oriented Programming in TURBO C++, Robert Lafore, Galgotia
Publications Pvt. Ltd., 1994, paperback Ed
5. Object Oriented Programming with C++, Balagurusamy, Tata McGraw
Paper Title: Artificial Intelligence

Paper Code: IT704
Max. Marks (Univ. Exam): 100
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part – A

Introduction:  (06)
Artificial Intelligence and its applications, Artificial Intelligence Techniques, criteria of success, Intelligent Agents, Nature and structure of Agents, Learning Agents

Problem solving techniques:  (09)
State space search, control strategies, heuristic search, problem characteristics, production system characteristics., Generate and test, Hill climbing, best first search, A* search, Constraint satisfaction problem, Mean-end analysis, Min-Max Search, Alpha-Beta Pruning, Additional refinements, Iterative Deepening

Knowledge representation:  (08)
Mapping between facts and representations, Approaches to knowledge representation, procedural vs declarative knowledge, Forward vs. Backward reasoning, Matching, conflict resolution, Non-monotonic reasoning, Default reasoning, statistical reasoning, fuzzy logic Weak and Strong filler structures, semantic nets, frame, conceptual dependency, scripts.

Part – B

Planning:  (06)
The Planning problem, planning with state space search, partial order planning, planning graphs, planning with propositional logic, Analysis of planning approaches, Hierarchical planning, conditional planning, Continuous and Multi Agent planning

Learning :  (10)
Forms of Learning, inductive learning, Decision trees, Computational learning theory, Logical formulation, knowledge in learning, Explanation based and relevance based learning, statistical learning, Learning with complete data and hidden variables, instance based learning, Neural Networks

Introduction to Natural Language processing and Expert system:  (06)
Books Recommended:

References:

Paper Title: MOBILE COMPUTING

Paper Code: IT704
Max. Marks (Univ. Exam): 100
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

SECTION – A

Mobility: (6)
Issues, challenges, and benefits; Review of mobile and cellular communication technology; Review of distributed/network operating systems, ubiquitous computing.

Global System for Mobile Communication (GSM) System Overview: (5)
GSM Architecture, Mobility Management, Network Signaling, GPRS

Mobile IP Networks: (5)
Physical mobility, challenges, limits and connectivity, mobile IP and cellular IP in mobile computing.

Mobile Transport Layer: (5)
Transport layer issues in wireless, Indirect TCP, Snoop TCP, Mobile TCP

SECTION – B

Wireless LANs: (6)
Introduction to IEEE 802.11, Bluetooth technologies and standards.

Mobile Adhoc Networks: (6)
Hidden and exposed terminal problems; Routing protocols: DSDV, DSR, AODV.
Mobile Devices and OS: (6)

Application Development: (6)
WWW programming model, Development Environment for Mobile Devices.

Text Books:

References:
3. Raj Kamal : Mobile Coomputing, Oxford University Press
SYLLABUS FOR B.E.M.B.A (IT) Eighth Semester

Paper Title: DIGITAL IMAGE PROCESSING

Paper Code: IT801  Max. Marks (Univ. Exam): 100  Time: 3 Hours
          Max. Marks (Int. Exam): 50  Total Lectures: 45
         L  T  P  3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

SECTION – A

Introduction to Image Processing: Digital Image representation, Sampling & Quantization, Steps in image Processing, Image acquisition, color image representation, color models

Image Transformation & spatial Filtering:
Intensity transform functions, histogram processing, Spatial filtering, fourier transforms and its properties, Walsh transform, Hotelling transforms, Haar and slant transforms, Hadamard transforms, frequency domain filters, Homomorphic Filtering, Pseudo coloring, color transforms

Image Restoration:
Image degradation and restoration process, Noise Models, Noise Filters, degradation function, Inverse Filtering

SECTION – B

Image Compression:
Coding redundancy, Interpixel redundancy, Psychovisual redundancy, Huffman Coding, Arithmetic coding, Lossy compression techniques, JPEG Compression

Image Segmentation & Representation:
Point, Line and Edge Detection, Thresholding, Edge and Boundary linking, Hough transforms, Region Based Segmentation, Boundary representation, Boundary Descriptors, Regional Descriptors

Object Recognition:
Patterns and Patterns classes, Recognition based on Decision Theoretic methods

Text Books:
References:


Paper Title: DIGITAL IMAGE PROCESSING (Practical)

Paper Code: IT 851 Max. Marks: 75 Time: 3 hours

Note: Students are required to complete any 8 practicals by implementing them in any of the programming language such as Java, C/C++, C#, MATLAB

1. Reading and displaying images in different formats using different color models.
2. Converting color images into monochrome images.
3. Understanding brightness, contrast and intensity concept of images
4. Images enhancements using grey level transformations
5. Image enhancements using spatial filters
6. Image enhancements in frequency domain
7. Homomorphic Filtering
8. Image Noise removal and inverse filtering of images
9. Image color enhancements using pseudo coloring techniques
10. Point, Line, Edge and Boundary Detections in images
11. Histogram Matching and specification on images
12. Boundary Linking techniques on images
13. Thresholding of Images
14. Magnification of Images
15. Image representation and Description techniques
Paper title: EMBEDDED SYSTEM DESIGN

Paper Code: IT802
Max. Marks (Univ. Exam): 100
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 1 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part - A

Introduction to Microcontrollers
(08)
Comparison of Microprocessors and Microcontrollers. Embedded and external memory devices, CISC and RISC processors, Harvard and Von Neumann Architectures.

Overview of 8 bit Microcontrollers
(12)
Overview of 8051, Architecture, addressing modes and instructions. Interrupts, Timer/Counters, Serial Communication and applications. Interfacing Overview of Atmel 89C51 microcontroller.

Part - B

PIC Microcontrollers
(17)
Introduction and features, PIC 16C6X/7X: Architecture, Registers, Reset actions, Memory Organization, Instructions, Addressing Modes, I/O Ports, Interrupts, Timers, ADC. Input Capture, Output Compare, Frequency Measurement, Serial I/O Device

Software Development & Tools
(04)

Real Time Operating Systems
(04)
RTOS Architecture, Task and Task States, Tasks and Data, Semaphores and shared data, Operating System Services: message queues, timer function, events, memory management, interrupt Routines in an RTOS environment, Basic Design Using RTOS

Books Recommended:

3. Microcontrollers (Theory and Applications) by Ajay Deshmukh, TMH Publishers

Paper title: EMBEDDED SYSTEM DESIGN & TECHNIQUES

Paper Code: IT 852
Max. Marks: 75
Time: 3 hours

Practical based on theory.

Paper title: Business Research

Paper Code: IBM-801
Max. Marks (Univ. Exam): 100
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Research Design formulation, Exploratory, Descriptive and Casual Research, Exploratory Research Design- Secondary Data, Primary Data, Qualitative Research- Focus Group Interviews, Depth Interviews, Analysis of Qualitative Data, Survey and observation- Survey methods, Observation method, Casual Research Design- Experimentation, Validity in Experimentation, Extraneous variables, Statistical Designs- Randomized-Block Design, Latin Square Design, Factorial Design

Measurement and Scaling- Primary Scales of measurement, Comparative Scaling Techniques, Non comparative Scaling techniques-Likert, Semantic Differential Scale, Stapel Scale, Questionnaire Design- question content, structure and order

Part-B

Sampling Design: Meaning and need of Sampling, Probability and non-probability sampling design, simple random sampling, systematic sampling, stratified sampling, cluster sampling and convenience, sampling, judgement and quota sampling (non-probability), determination of sample size, Hypothesis Testing, Parametric and Non-Parametric Tests

Discriminant and Logit Analysis- Formulating the problem for Discriminant analysis, Multiple Discriminant Analysis, Logit model
Factor analysis, Cluster analysis and Multidimensional Scaling - Conducting Factor analysis, Cluster analysis and Multidimensional Scaling - Conjoint Analysis

2. Marketing Research-Text and Cases, Rajendra Nangundkar, TMH
3. Marketing Research – GC Beri, TMH
4. Marketing Research- Parshuram, Dhruv Grewal, R. Krishnan – Biztantra

Paper Title: Financial Management

Paper Code: IBM-802
Max. Marks (Univ. Exam): 100
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Introduction to Financial Management: Meaning; Scope; Finance Function; Financial Goals; Agency Problem; Relationship of Finance with Accounts and Economics.

Sources of Finance: Features; Advantages and Limitations of Equity Shares; Preference Shares; Debentures; Term-Loans; Right Issue.

Cost of Capital: Meaning; Calculation of Cost of Debt Capital; Equity Capital; Preference Capital; Retained Earnings; Weighted Average Cost of Capital.

Capital Structure: Meaning; Determinants; Assumptions; Net Income and Operating Income Approach; Traditional Position; M-M Position; EBIT and EPS Analysis; Capital Structure and Taxation.

Leverage Analysis: Meaning; Types; Estimation of Financial; Operating and Combined Leverage; Relation of Financial Leverage with Risk and Return.

Management of Working Capital: Meaning of WC; Need of WC Management; Determinants of WC; Operating Cycle; Estimation of WC.

Part-B

Inventory Management: Meaning; Need to hold Inventory; Objective of Inventory Management; Inventory Investment Analysis; Inventory Control System.

Capital Budgeting: Meaning; Basic Principles of Costs and Benefits; Investment Criteria; Pay back Method; Accounting Rate of Return Method; Net Present Value
Method; Benefit-Cost Ratio; Internal Rate of Return; Capital Rationing; Introduction to Basic Techniques of Risk Analysis in Capital Budgeting.

Dividend Decisions: Meaning and Types of Dividend; Issues in Dividend Policy; Traditional Model; Walter Model; Gordon Model; Miller and Modigliani Model; Bonus Shares and Stock Splits.

**References:**
1. Financial Management, Van Horne ,PHI
SYLLABUS FOR B.E.M.B.A (IT) Ninth Semester

Paper Title: QUANTITATIVE TECHNIQUES FOR MANAGEMENT
(Compulsory)

Paper Code: IBM-901  Max. Marks (Univ. Exam): 100  Time: 3 Hours
Max. Marks (Int. Exam): 50  Total Lectures: 45
L T P  3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A

Linear Programming- Equation formulation, Graphical solution of two-variable linear programming problems, Simplex algorithm, Transportation and Assignment problems

Game theory- Game models, zero sum games, dominance rule, 2 x n and m x 2 games, solution of m x n games

Queuing: Single channel single-phase queuing system, multichannel single-phase queuing system, single channel multiphase queuing system

Part-B

Markov Chains – Markov processes, Markov analysis, input transition probabilities, input conditions, output- specific state probabilities, steady state probabilities, absorbing chains

Simple linear regression and multiple regression analysis (with two independent variables), specification of regression models and estimation of parameters, interpretation of results

Forecasting models- Moving- average forecast methods, Simple Exponential Smoothing, Holt’s method- Exponential Smoothing with trend, Winter’s Method- Exponential Smoothing with Seasonality

1. Business Forecasting : John.E.Hanke , Dean.W.Wichern , PHI
2. Statistics for Managers using Microsoft Excel : Levine, Stephan, Krehbiel, Brenson , PHI
Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A

Research Design formulation, Exploratory, Descriptive and Casual Research, Exploratory Research Design- Secondary Data, Primary Data, Qualitative Research-Focus Group Interviews, Depth Interviews, Analysis of Qualitative Data, Survey and observation- Survey methods, Observation method, Casual Research Design- Experimentation, Validity in Experimentation, Extraneous variables, Statistical Designs-Randomized-Block Design, Latin Square Design, Factorial Design

Measurement and Scaling- Primary Scales of measurement, Comparative Scaling Techniques, Non comparative Scaling techniques-Likert, Semantic Differential Scale, Stapel Scale, Questionnaire Design- question content, structure and order

Part-B

Sampling Design: Meaning and need of Sampling, Probability and non-probability sampling design, simple random sampling, systematic sampling, stratified sampling, cluster sampling and convenience sampling, judgement and quota sampling (non-probability), determination of sample size, Hypothesis Testing, Parametric and Non-Parametric Tests

Discriminant and Logit Analysis- Formulating the problem for Discriminant analysis, Multiple Discriminant Analysis, Logit model

Factor analysis, Cluster analysis and Multidimensional Scaling - Conducting Factor analysis, Cluster analysis and Multidimensional Scaling- Conjoint Analysis

6. Marketing Research-Text and Cases, Rajendra Nangundkar, TMH
7. Marketing Research –GC Beri, TMH
8. Marketing Research- Parshuram, Dhruv Grewal, R. Krishnan – Biztantra
Part -A
Definition of Supply Chain Management and Logistics - Scope of Transportation, Relationship between transportation and other business functions, Transport Economics: Distance – volume-density, Freight Cost – Handling – Liability - market factors; Third party logistics (3 PL) & fourth party logistics service provider (4 PL), Logistics equipment; Reverse Logistics, Govt. rule & regulations related to Logistics; Documentation related to Transportation :- Bill of Lading, Freight Bill, Claims and F.O.B Terms of Sale, Legal Classification of carriers- Private, Contract carrier etc.

Inventory Control, Planning & Managing Inventories: Strategic role of stock, costs of holding stock, Economic Order Quantity (EOQ), uncertainty in demand and costs, models for known demand; price discount from suppliers, planned shortages and back-orders, models for uncertain lead time demand

Material Handling & Wastage Control; Packing & Packaging; Order Management; Competitive advantage through logistics and supply chain management; Responsive Supply Chain, RFID applications in Supply Chain.

Part -B
Network Design and Facility Location –Facility location analysis, Optimization models, Heuristic Modeling –Grid Technique. Information systems for Supply Chain Management- Contemporary Logistics Information Technologies, , e-enabled logistics management and tracking systems.

Planning & Sourcing in Supply Chain; Planning demand and supply: Demand forecasting – Type and Time horizon of forecast and category of forecasting, aggregate planning; Strategic sourcing; Sourcing decision in Supply Chain- selection of source, technical up-gradation of vendor, vendor performance evaluation, vendor rationalization.

References:
1. Designing & Managing the Supply Chain, Simchi-Levi, David, TMH
2. Inventory Control and Management, Donald Waters, Wiley
Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A
Marketing of services - Introduction - Growth of the Service Sector - The Concept of Service - Characteristics of Services - Classification of Services - Designing the Service-Blueprinting, Using Technology, Developing Human Resources, Building Service Aspirations.
Strategic Marketing Management for Services - Matching Demand and Supply through Capacity Planning and Segmentation - Internal Marketing of a Service - External versus Internal Orientation of Service Strategy.

Part-B
Delivering Quality Services - Causes of Service-Quality Gaps: The Customer Expectations versus Perceived Service Gap, Factors and Techniques to Resolve this Gap
Marketing of Services with special reference to (a) Financial Services (b) Health Services (c) Hospitality Services including Travel, Hotels and Tourism. (d) Professional Services (e) Public Utility Services (f) Communication Services (g) Educational Services

Paper Title: ADVERTISING AND SALES MANAGEMENT: Elective-Marketing

Paper Code: IBM-905  Max. Marks (Univ. Exam): 100  Time: 3 Hours
Max. Marks (Int. Exam): 50  Total Lectures: 45
L T P  3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A

Advertising: As an element in Marketing Mix, its role and importance; Advertising as a means of communication, Setting advertising objectives, DAGMAR approach to setting objectives. Preparing advertising plan, Developing message, writing copy, advertising appeals and per-testing and post-teaching copy

Media decisions, media strategy and scheduling decisions; Planning and managing advertising campaigns; Different types of advertising, public relations; Industrial advertising; advertising budget and relevant decisions; Advertising agencies; their role and importance; management problems of agencies; client-agency relations; advertising in India, problems and prospects.

Part-B

Sales Management: Size of the sales force, sales organization based on customer, geography, product and combinations and current trends – sales training programs and motivating the sales force – sales force compensation, sales incentives and sales force evaluation – controlling the sales effort – sales quotas, sales territories, sales audit, selecting channel members, setting distribution objectives and tasks – Target markets and channel design strategies.

Product, Pricing and Promotion issues in Channel Management and Physical Distribution - Motivating channel members – Evaluating channel member performance – Vertical marketing systems – Retail co-operatives, Franchise systems and corporate marketing systems.

E-commerce and e-retailing as a channel of distribution, Electronic intermediaries, Disintermediation and Re-intermediation
Paper Title: INDIAN FINANCIAL SYSTEM : Elective-Finance

Max. Marks (Univ. Exam): 100  
Max. Marks (Int. Exam): 50  
Time: 3 Hours  
Total Lectures: 45  
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A
Commercial Banking-Evolution, Financial Services, Fiduciary Services, Off-balance Sheet Activities, Analysis of Assets and Liabilities of Scheduled Commercial Banks; Reserve Bank of India-Central Banking- Introduction to Central Banking, Instruments of Monetary Control, Public Debt, Secondary Debt Market, REPO's, Reserve Requirements, Selective Credit Controls, Advances to Priority Sector, Supervision System; Regional Rural Banks- Objectives, RBI Assistance, Evaluation of RRB's.

Cooperative Credit- Introduction, Role of RBI, Organizational Structure, National Bank for Agriculture and Rural Development (NABARD), Reforms in Cooperative Credit.

Non-banking Finance Companies - Introduction, Definition of Non-banking Finance Company, Financial Sector Reform, Liberalization Measures for NBFC's, Regulations for NBFC's Accepting Public Deposits, Limits on Acceptance of Deposits, Size of Non-banking Companies, Deposits, Distribution of Deposits, Comparison of NOF and Deposits, Capital Issues by Finance Companies, FCNR Deposits for NBFC's, Assets of NBFC's, Investment Norms for NBFC's, Deployment of Funds, Funds Mismatch of HP/Leasing Companies.

Part-B

Paper Title: MANAGEMENT OF FINANCIAL SERVICES: Elective-Finance

Paper Code: IBM-907 Max. Marks (Univ. Exam): 100 Time: 3 Hours
Max. Marks (Int. Exam): 50 Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A
Financial Services - Meaning, types and their importance, Securities Trading - Online Vs Offline Trading, Demat and Remat, Depository - Introduction, Concept, depository participants, functioning of depository systems, process of switching over to depository systems, benefits, depository systems in India, SEBI regulation.

Insurance Services- Introduction, Principles of insurance, Types of Insurance, Life Insurance Products- Traditional and ULIPs, Credit rating - the concept and objective of credit rating, various credit rating agencies in India and International credit rating agencies, factors affecting credit rating & procedural aspects.

Part-B
Leasing - concept and development of leasing, business, difference between leasing & hire purchase, types of leasing business, advantages to lessor and lessee.

Venture capital - concepts and characteristics of venture capital, venture capital in India, guidelines for venture capital.

Call money market, Treasury bill market, Commercial Bill market, Market for CPs and CDs, Discount market and market for financial guarantees, Factoring - Development of factoring types & importance, procedural aspects in factoring, financial aspects, prospects of factoring in India.

Plastic Money - Concept and different forms of plastic money - credit and debit cards, pros and cons. Credit process followed by credit card organizations. Factors affecting utilization of plastic money in India.

2. Nalini P T Financial Instruments and services PHI
Paper Title: CORPORATE TAX PLANNING: Elective-Finance

Paper Code: IBM-908       Max. Marks (Univ. Exam): 100       Time: 3 Hours
Max. Marks (Int. Exam): 50       Total Lectures: 45
L T P  3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part -A
Basic framework of direct and indirect taxes in India, Concept of Tax Planning, Meaning, importance and scope, Tax planning versus Tax avoidance and Tax evasion, Methods of Tax Planning, Areas of Tax Planning, Scale of business / Nature of business and its relation to Tax Planning.
Taxation of companies in India, Assessment of Business and other incomes of Joint Stock Companies, Tax planning and managerial considerations with reference to newly established Industrial Undertakings in certain specified areas like E.P.Z and E.O.U’s. Tax Planning with reference to amalgamations, Foreign collaborations and joint venture agreements
Tax Planning and Financial management – Tax planning with reference to capital structure, capital budgeting and management of working capital, Tax considerations in issue of bonus, shares and dividend policy.

Part-B
Tax Planning with regard to specific management decisions like Make of Buy, own on Lease repair, renewal, replace, closure or continuance, Maintenance of proper records of complying with requirement of tax laws, deductions of Tax at source, advance payment of tax, time for payment and filing of income tax returns, types of assessments and procedure, defaults and penalties.
Tax planning in respect of excise duty, custom duty and sales tax, maintenance of proper records for complying with the requirements of indirect tax laws, filing of returns under different indirect tax laws, details and penalties under indirect tax laws.

1. Singhania, V.K    Direct Taxes :Planning and Maintenance (Tax Man publications)
2. Lakhotia.R.N , Corporate Tax Planning
3. Bhagwati Prasad , Corporate Taxation –A Hand Book (Tax Man)
Paper Title: E-COMMERCE: Elective-IT

Paper Code: IBM-909
Max. Marks (Univ. Exam): 100
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A

Ecommerce terminology: Blogs, Message boards, Newsgroups, Banner Advertising, Spiders / crawlers/ robots, hacking, SSL / SET protocols, Escrow, Podcast, webcast, web beacons, spyware, Adware, RSS feed, Spam, Web agents, cookies, search engine, worms

Planning for a Ecommerce: Value chain analysis, SWOT analysis, studying trends and current technology, government incentives, hardware and software assessment for building a web store, intermediaries in Ecommerce

Characteristics of E-Business markets: Various business models, Business model design, pricing and distribution of digital products, bundling, building customer traffic, subscription vs paid model, bricks and clicks business model, call centre integration in ecommerce, affiliate marketing, viral marketing

Part-B

Security in ecommerce transactions: Public key infrastructure, process of getting a digital signature in India, types of digital signatures, role of intermediaries like Verisign

Internet audience: study of internet audience, online consumer behavior, Online research: Click stream analysis, Search log analysis, emails, pop-ups, online focus group

Online payment systems: On-Line Electronic Cash, Electronic Payment Schemes, Credit card secure electronic transaction, e-cheque, accumulating balance payment system, stored value payment system, digital wallets

References

1. E-commerce Management, Text and cases, Sandeep Krishna Murthy, Cengage
2. E-business organizational and technical foundation, Michael P. Papazoglou, Pieter M. A.
   Wiley
3. Ecommerce, Strategy, Technology and Implementation, Gary P. Schneider, Cengage
4. Web commerce Technology Handbook, Daniel Minoli, Emma Minoli, TMH

Paper Title: IT PROJECT MANAGEMENT: Elective-IT

Paper Code: IBM-910  Max. Marks (Univ. Exam): 100  Time: 3 Hours
               Max. Marks (Int. Exam): 50
               Total Lectures: 45  L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A

Software development process: waterfall model, prototyping, spiral model, software configuration management process, process management- capability maturity model

Software requirement analysis and specification: problem analysis, data flow diagram, entity-relationship modeling, decision tables, creating a requirement document

Planning a software project: cost estimation-COCOMO model, schedule and milestones, personnel plan, software quality assurance plans, configuration management plans, project monitoring plans, risk management

Part-B

Function-Oriented design: Modularity, Top-down and bottom-up strategies, structure charts, first-level factoring, design heuristics, Metrics- network metrics, stability metrics, information flow metrics

Object oriented design (OO): classes and objects, encapsulation, inheritance and polymorphism, OO design notation and specification, dynamic modeling, metrics-Weighted Methods per Class (WMC), Depth of Inheritance (DIT), Number of Children (NOC), Coupling between Classes (CBC)

Software testing: error, fault and failure, top-down and bottom-up approaches, test cases and test criteria, functional testing- equivalence class partitioning, cause-effect graphing, structural testing-control based criteria, data flow based criteria

Software delivery: models, managing IT project teams
References:

1. Software Engineering, Ian Sommerville, Addison-Wesley
2. Software Engineering Project Management, R. Thayer, Wiley

Paper Title: DECISION SUPPORT SYSTEMS : Elective-IT

Paper Code: IBM-911

Max. Marks (Univ. Exam): 100
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A

Distinction between Transaction Processing System (TPS), Management Information System (MIS), Expert System (ES) and Decision Support System (DSS)

Architectures of DSS system: components, classifications, backend and front end components of DSS, Web based DSS, Group Decision Support System (GDSS), technologies and infrastructure for group decision making, distributed computing

Modeling for DSS: the decision making modeling process, Intelligence, design and choice phases, design under certainty, risk and uncertainty, sensitivity analysis, what-if, goal-seek and scenario analysis with spreadsheets

DSS design to support operational, tactical and strategic decision making

DSS design methodology for Healthcare, Insurance, Manufacturing and Education sectors

Part-B

Enterprise Decision Support System (EDSS): Characteristics and capabilities of EDSS, integrating DSS and EDSS, Computerized systems like CRM, ERP, MRP and their design basics, EDSS and supply chain, Corporate Enterprise portals and their design, Electronic Document Management (EDM) systems

Importance of Knowledge Management Systems (KMS) and its integration with DSS, Design of Knowledge Management System for different sectors, Artificial Intelligence based DSS systems.
Reference

1. Decision Support Systems and Intelligent Systems, E.Turban, J.E.Aronson, Pearson

Paper Title: TRAINING AND DEVELOPMENT: Elective-HR

Paper Code: IBM-912  Max. Marks (Univ. Exam): 100  Time: 3 Hours
Max. Marks (Int. Exam): 50  Total Lectures: 45
L  T  P  3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A

National Training Interventions: Training as an economic instrument, achievements and challenges, National initiatives: 1964 to the present day, the European scene, which way forward.

Attitudes Towards Education and training: Education, training and work, changes in attitudes to training and development, Philosophies of training. Learning and Training: What do we understand by learning, Reinforcement theories, cybernetic and information theories, cognitive theories and problem solving, experimental learning, Learning to learn and self-development, Mental process, other horizons.

The Learner and the Organization: The learner, the organization as a learning environment, the learning organization. Approaches to Training Interventions: Organization learning systems, Generalized approaches, Planned training interventions, the costs and benefits of training interventions.

Part-B

The Training Function in Organizations: The training function, Management's responsibility for training, Creating and appropriate structure, The training of training staff, Ethical standards

Assessing Organizational Training Needs: The levels of organizational needs, types of organizational reviews, before starting the review, reasons for an organizational review, carrying out an organization-wide review.

Training Policy, Plans and Resources: Training policy, policy development, annual training plan, training resources, from policy to training plan and budget, Assessing Training Needs-the job and the individual: Job training analysis, Analytical techniques, Carrying out an individual training needs analysis, assessing performance.
Determining and evaluating training interventions: Training interventions, determination of training objectives, determination of the appropriate training strategy, planning and implementation of the training, evaluation of the programme.

**Paper Title: ORGANIZATIONAL CHANGE AND DEVELOPMENT STRATEGIES: Elective-HR**

**Paper Code: IBM-913**  
Max. Marks (Univ. Exam): 100  
Max. Marks (Int. Exam): 50  
Time: 3 Hours  
Total Lectures: 45  
L T P 3 0 0

**Note:** Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

**Part-A**


Values, Assumption, And Beliefs in OD- Chronology of Events in Management and organization Thought, early Statement of OD values and assumptions, A Values Study.


OD Interventions :Thinking about OD Interventions, Classifying OD Interventions.

**Part-B**

Intergroup and Third-Party Peacemaking Interventions: Intergroup Team-Building Interventions, Third party Peacemaking Interventions, organization Mirror Interventions, Partnering.


Paper Title: INDUSTRIAL PSYCHOLOGY: Elective-HR

Paper Code: IBM-914       Max. Marks (Univ. Exam): 100       Time: 3 Hours
                         Max. Marks (Int. Exam): 50       Total Lectures: 45
                         L T P  3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A

Nature and scope of Industrial Psychology: Psychology and management, contributions of Freud and post Freudian development of Psychology

Factory organization: industrial bureaucracy, formal and informal groups, status system, balancing of social power, union and employer’s organizations

Psychology of leadership, understanding and motivating employees, industrial morale and job satisfaction, counseling, Psychology of industrial conflict, stress management

Part-B

Personality: Idiographic approach, Nomothetic approach, psychoanalytical perspectives, levels of awareness, defence mechanism, projective tests, Rorschach test, Thematic Appreciation Test (TAT), Role playing or visualization, stereotyping, brand personality
Trait perspective: Allport’s trait categories, Catell’s 16 PF test, personality tests, personality questionnaire, Type perspective- four humours, Sheldon’s typology, Eysenck’s typology, Factor theory, Jung’s typology, Allport’s typology

Intelligence: models, Stanford-Binet intelligence scale, Wechsler scale, Emotional intelligence

References:

1. Psychology in Organizations, S. Alexander Haslam, Sage publications
SYLLABUS FOR B.E.M.B.A (IT) Tenth Semester

Paper Title: STRATEGIC MANAGEMENT– Compulsory

Paper Code: IBM-1001
Max. Marks (Univ. Exam): 100
Max. Marks (Int. Exam): 50
Time: 3 Hours
Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part -A
Definition, nature, scope, and importance of strategy; and strategic management (Business policy), Strategic decision-making. Process of strategic management and levels at which strategy operates, Role of strategists, Defining strategic intent: Vision, Mission, Business definition, Goals and Objectives. Environmental Appraisal—Concept of environment, components of environment (Economic, legal, social, political and technological). Environmental scanning techniques- ETOP, QUEST and SWOT (TOWS) PEST. Internal Appraisal – The internal environment, organisational capabilities in various functional areas and Strategic Advantage Profile. Methods and techniques used for organisational appraisal (Value chain analysis, Financial and non financial analysis, historical analysis, Industry standards and benchmarking, Balanced scorecard and key factor rating). Identification of Critical Success Factors (CSF).

Part -B

Recommended Text Books

Paper Title: GLOBAL MARKETING: Elective-Marketing

Paper Code: IBM-1002  Max. Marks (Univ. Exam): 100  Time: 3 Hours
Max. Marks (Int. Exam): 50  Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A

Global Marketing: Development of Global Marketing, market characteristics, Industry conditions, marketing infrastructure, regulatory framework, basis for trade—absolute vs comparative advantage, protectionism and trade restrictions, tariffs, quotas, GATT

Selecting markets: list of selection criteria, market index for country selection, grouping global markets, consumer market, business market, and government market, categorizing global marketing mindsets, global market entry strategies—exporting, local production, ownership

Pricing for global markets: transportation cost, tariffs, taxes, local production costs, channel costs, market and environmental factors affecting price, determining transfer prices, dealing with parallel imports or gray markets, sources of finance—commercial banks, government sponsored financing

Part-B

Developing new products for global markets: three strategic choices—extension, adaptation, invention, role of foreign subsidiaries in R&D, acquisitions as a route to new products, joint venture route to new products, concept test, test marketing

Developing a global distribution strategy: distribution density, channel length, channel alignment, distribution logistics, locating and selecting channel partners

Planning and controlling global marketing: selecting control metrics, resolving conflicts between headquarters and subsidiaries

References:

Paper Title: CONSUMER BEHAVIOR: Elective-Marketing

Paper Code: IBM-1003 Max. Marks (Univ. Exam): 100 Time: 3 Hours
Max. Marks (Int. Exam): 50 Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A
Current trends in Consumer Behavior (CB), Consumer empowerment through the web, Information bank for understanding CB, consumer need arousal, need recognition, consumer Psychological set, consumer information search and processing, Brand evaluation, Purchase and post purchase behavior
Consumer learning, Habit and Brand Loyalty, unplanned purchase behavior, strategic implications of low-involvement decision making, situational influences, use of situational variables in marketing strategy, consumer perception, perception interpretation, price perception, Attitude development for change, lifestyle and personality

Part-B
Group and culture influences, culture values, cross-culture values, subculture influences, reference group influences, House-hold decision making, group communication – word of mouth as diffusion process, Market segmentation and Micromarketing
Marketing communication process – source effects in marketing communication, message effects, media effects, consumer decoding of marketing communication, Alternatives evaluation and selection- how consumers make choices, evaluation criteria, decision rules for Attribute based choices
Consumer Rights and Social responsibility

1. Consumer Behavior – Insights from Indian Market, Majumdar, PHI
2. Consumer Behavior – A Strategic Approach, Henry Assael, Biztantra (Dreamtech)
Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A


Risk and Return: Concept of Risk, Components of Investment Risk, Measurement of Risk through Standard Deviation, Regression Equation, Covariance, Concept of Return, Expected Yield, Actual Yield, Holding Period Yield, Relationship between Risk and Return


Part-B


Portfolio Analysis: Concept of Traditional and Modern Portfolio Analysis, Markowitz Theory Risk –Return Optimisation, Single Index Model, Beta Generation in Efficient
Frontier, Three securities Model, Interactive Risk through Covariance, Correlation Co-efficient, Sharpe’s Model.


2. Investment Management - Lofthouse, Stephen, John Wiley & Sons Publications

**Paper Title: INTERNATIONAL FINANCIAL MANAGEMENT : Elective - Finance**

**Paper Code: IBM-1005**

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**Note:** Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

**Part-A**

Global Financial markets and interest rates: domestic and offshore markets, Euromarkets, Interest rates in the global money markets, money market instruments
Foreign exchange market: types of transactions and settlement dates, exchange rate quotations and Arbitrage, exchange rate determination and forecasting
Forwards, Swaps and Interest parity: Swaps and deposit markets, interbank forward dealing, option forwards, Exchange Rate Agreements and Foreign Exchange Agreements (FXA), Forward currency markets in India

**Part-B**

Currency and Interest rate futures: futures contracts, markets and trading process, future prices expected spot prices and forward prices, option pricing models, Over the Counter (OTC) market prices
Hedging, Speculation and Management of Transaction exposure: Hedging with money market, currency options, currency futures, internal hedging strategies
Management of Interest Rate Exposure: Forward Rate Agreement s (FRAs), Interest
Paper Title: STRATEGIC FINANCIAL MANAGEMENT: Elective-Finance

Paper Code: IBM-1006  Max. Marks (Univ. Exam): 100  Time: 3 Hours
Max. Marks (Int. Exam): 50  Total Lectures: 45
L T P 3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

**Part-A**
Options, Futures and Corporate finance: call options, put options, valuing options, option –pricing formula, stocks and bonds as options, capital structure policy and options
Warrants and convertibles: difference between warrants and call options, warrant pricing and Black-Scholes model, value of convertible bonds
Derivatives and Hedging risk: forward contracts and futures contracts, interest-rate futures contracts, duration hedging

**Part-B**
International Corporate Finance: Foreign exchange markets and exchange rates, law of one price and purchasing-power parity, interest rates and exchange rates, interest rate parity, international bond marketing

References:
1. Mergers, Restructuring and Corporate Control, Weston, Chung, Hoag , PHI
2. Corporate Finance, Ross, Westerfield, Jaffe, TMH
Paper Title: Enterprise Resource Planning: Elective-IT

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

**Part-A**

ERP Package selection: Need assessment, Justifying ERP implementation, cost benefit analysis, ERP package evaluation and selection, make or buy decision

ERP systems development process: ERP implementation life cycle, planning, requirement analysis, reengineering vs customizing, transition strategies—big bang, phased, parallel, hybrid, implementation-hidden costs

ERP systems: Sales and Marketing—sales and distribution, sales forecasting, product pricing systems, billing systems ERP and Customer Relationship Management (CRM), Accounting and Finance—cash management process, capital budgeting process, financial accounting and management accounting Production and Materials management—MRP system, capacity planning process, manufacturing execution systems, Human Resources—compensation and benefits administration

**Part-B**

Managing an ERP project: Risks in ERP implementation, managing large scale ERP projects, project team selection, user training, technological challenges, operation and upgradation issues

Role of consultants and vendors: maintenance of ERP system, future trends and directions in ERP, open source ERP systems

**References**

1. Enterprise Resource Planning, Mary Sumner, Pearson
2. Enterprise Resource Planning, Alexis Leon, TMH
Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A

Data Warehousing (DW): components of DW, DW and data marts, planning for DW, specifying business requirements, DW and Meta Data, dimensional modeling, slowly changing dimensions type1, 2 and 3, factless fact tables, aggregate fact tables, data extraction, transformation and loading (ETL), ETL tools, indexing the DW, DW and OLAP

Data mining: preprocessing data for data mining, descriptive data summarization, data cleaning, prediction modeling with simple linear regression and multiple regression, logistic regression

Classification data mining modeling: classification by decision tree induction, tree pruning, Bayesian classification, classification by back propagation in Neural networks

Part-B

Mining frequent patterns and associations: market basket analysis, Apriori Algorithm, web mining, web log analysis, text mining

Cluster analysis: interval scaled variables and binary variables, cluster analysis by partitioning, hierarchical methods, density based methods, clustering based on distance

Open source data mining software and proprietary software

References:

1. Data Mining –Concepts and Techniques, J.Han, Micheline Kamber, Elsevier
2. Data Mining –Methods and Models, Daniel T.Larose, Wiley
3. Data Mining- Galit Shimuli, Wiley
Paper Title: STRATEGIC HUMAN RESOURCE MANAGEMENT: Elective-HR

Paper Code: IBM-1009  Max. Marks (Univ. Exam): 100  Time: 3 Hours
Max. Marks (Int. Exam): 50  Total Lectures: 45
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Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part-A and two from Part-B.

Part-A

Introduction to Strategic Human Resource Issues, Challenges of Career development, Diverse work force development, self development, Pay-for-performance systems, Types of Pay-for-performance plans- individual based, team based, plant wide and corporate level

Hofstede’s cultural orientation model, FIRO-B questionnaire, Johari Window questionnaire, HR metrics and importance, Factor analysis in HR Research, competency mapping models and framework

Part-B

Determining the mix of Host-country and expatriate employees, the challenges of expatriate assignments, selective training, career development and compensation of expatriate employees, developing a global HR system and pay system, international staffing managing diversity, off shoring, equal employment opportunities, repatriation problems and solutions, HR strategies and orientation for Mergers

Managing employee separation, Downsizing and outplacement, cost and benefits of employee separation, types of early separation (voluntary and Involuntary), features of early retirement policies, managing layoffs, alternatives to layoffs, the goals of outplacement.

3. Human Resource Research methods, Dipak Kumar Bhattacharyya, Oxford
Paper Title: MANPOWER PLANNING & PERFORMANCE APPRAISAL: Elective-HR

Paper Code: IBM-1010       Max. Marks (Univ. Exam): 100       Time: 3 Hours
                  Max. Marks (Int. Exam): 50       Total Lectures: 45
                  L  T  P   3 0 0

Note: Examiner shall set eight questions, four from Part-A and four from Part-B of the syllabus. Candidate will be required to attempt any five questions selecting at least two questions from Part A and two from Part B.

Part-A

Manpower planning: setting up objectives, aligning manpower planning with strategic business goals, Role analysis, job analysis, job specification, job description

Recruitment and selection: recruitment and legislation, fair employment practices, recruitment, hiring procedure, forecasting human resource requirements, managing growth and replacement of top executives

Part-B

Performance appraisal: need for performance appraisal, parameters of performance appraisal, computerized performance appraisal systems, self appraisal questionnaire, 360 degree performance appraisal systems

Comparing performance appraisal and performance management, graphic rating scales, paired comparison method, forced distribution, critical incident, behavioral anchored rating scales, web-based performance appraisals, conducting appraisal interviews

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