

SEMESTER VI (B. Sc. IT)

0202182: C#

Full Marks: 100

Introduction to C#

Marks: 10

Introduction; Brief History; Difference Between C++ and C#; Difference Between C# and Java; Object Oriented Programming; Net Framework; Design Features of C#; MSIL (Microsoft Intermediate Language) Code; JIT Compiler; Common Language Specification; Common Type System; Comments; Visual Studio .Net; Program Structure of C#: Working without Visual Studio .Net, With using Visual Studio .Net, Understanding our Application Code; Namespace in C#; Rules.

Fundamentals of C# language

Marks: 14

Introduction to Data Types; Literals: C# Supports Two Forms of String Literals, Regular string literals; Variables: Rules for Creating Variables; Basic Data Types and their Mapping to CTS: Value Types, Implicit Data Types, Main Features of Simple Types, Initialising Value Types, Reference Types; Declaration of Variables in C#: Value Type Variables, Reference Type Variables, Constants, Scope of Variables; Boxing Conversion; Unboxing Conversion; Operators and Expressions: Arithmetic Operators, Relational Operators, Logical and Bitwise Operator, Assignment Operators; Operator Precedence and Associativity

Decision Making and Branching

Marks: 9

Introduction; if statement; if...else statement; Switch statement; Decision Making and Looping: Types of loops; Jump Statements

Methods in C#

Marks: 17

Introduction; Declaring Method; The Main () Method; Invoking Methods; Method Parameters; Nesting of Methods; Methods Parameters: Value Parameters, Reference Parameter, Output Parameter, Parameter Array, Passing Parameter, Passing Value-Type Parameter, Passing Value Types by Referenc, Swapping Value Types, Passing Reference-Type Parameter, Passing Reference Types by Value, Passing Reference Types by Reference; Swapping Two Strings: Pass By Value, Pass By Reference; In and Out Parameters; Variable Arguments List; Runtime Evaluation of Argument List; Method Overloading; Arrays: 1-D array, Value Type and Reference Type Arrays, Declaring 1-D array, 2-D array, Array initialization, Declaring Multi-dia Array, Array-of-arrays (jagged) Programming Arrays in C#; Defining Arrays of Different Types; Array Class; Array Properties

Classes and Objects

Marks: 15

Introduction; Overview of Classes; Programs and Classes: A Quick Example: Declaring a Class, Class Members, Fields, Explicit and Implicit Field Initialisation; Declarations with Multiple Fields; Methods; Creating Variables and Instances of a Class; Instance Members; Access Modifiers; Private and Public Access; Depicting Public and Private Access: Example of Member Access, Accessing Members from Inside the Class, Accessing Members from Outside the Class; Putting It All Together; Classes and Objects; Constructors; Struct; Static Classes and Static Class Members; Static Classes: When to Use Static Classes, Static Members, Static Constructors, Private Constructors, How to Write a Copy Constructor?, Destructors; Member Initialisation; The this Reference; C# Nested Class; Types Versus Instances.; Constant Members; Read Only Member; C#'s Const vs. Readonly; Properties; Indexers

Interfaces

Marks: 11

Interface: Declaring an Interface, Implementing an Interface, Implementing Multiple Interfaces, References to Multiple Interfaces, Accessing Explicit Interface Member Implementations, Operator Overloading; Overloadable Operators; Delegates and Events; Instance Versus Static Method Targets; Generic Delegate Types; The Func and Action Delegates; Return Type Variance; Type Parameter Variance for Generic Delegates

Inheritance and Polymorphism

Marks: 13

Overriding Methods; Abstract Classes; Abstract Methods; Sealed Classes; Preventing Inheritance; Inheritance and Polymorphism: Inheritance, Multilevel Inheritance, Encapsulation, Polymorphism; Casting and Reference Conversions: upcasting, downcasting; Polymorphic Programming in .NET; Casting and Reference Conversions: Upcasting, Downcasting, Polymorphism; The as operator; The is operator; Abstract Classes and Abstract Members; Hiding Inherited Members; Sealing Functions and Classes; The base Keyword; Constructors and Inheritance; Constructor and Field Initialization Order; Overloading and Resolution

Managing Console I/O Operations

Marks: 11

Introduction; The Console Class; Console Input; Console Output; Formatted Output; Numeric Formatting: Standard Numeric Format, Custom Numeric Format; Managing Errors and Exceptions; Types of Errors: Compile-Time Errors, Run-Time Errors; Debugging in C#.; Execution Control; Breakpoints; Exceptions Syntax of Exception Handling Code; Handling Exceptions; Multiple Catch Statement

Reference Books:

1. Albahari, J. and Albahari, B., *C# 4.0 Pocket Reference*, O'really Publication.
2. Bako, P., 2010. *Introduction to C#*, Createspsce Publication.
3. Blum, R., 2003, *C# Network Programming*, SYBEX san Francisco London.
4. Dixit, J. B., 2005. *Fundamentals of Computing*, Laxmi Publications (P) LTD.
5. Doyle, B., 2008. *C# Programming: From Problem Analysis to Program Design*, 2nd ed., Thomson Publication.
6. Harvey, M. D. and Paul, J. D., 2006. *C# for Programmers*, Pearson Education.
7. Hunt, J., 2002. *Guide to C# And Object Orientation*, Springer Publication.
8. James, F., 2003. *Teach Yourself Visual C# >NET 2003*, 1st ed., SAMS Publication

0202030: INTERNET TECHNOLOGIES

Full Marks: 100

Overview of Internet

Marks: 8

Introduction; History; Internet Culture; Internet Service Provider; Addresses: Internet Addresses, IP Address, Domain Name Server; Internet Tools; Internet Applications

Components of Internet Structure

Marks: 7

Personal Computer; Communication Equipment of User: Local Loop Carrier, Location of ISP, Web Servers

Electronic Mail and Features of Internet

Marks: 12

Introduction; Message Components; Mailer Features; E-mail Management; MIME Types; Newsgroups; Mailing Lists; Chatting Rooms

World Wide Web

Marks: 14

Introduction to WWW; Web Browser; Searching WWW: Directories, Search Engines, Meta Search Engines, Searching Strategies; Browsing and Surfing; Web Page Installation; Plug-ins

Security Policy and Security Threats

Marks: 16

Need of Security; Security Goals; Purposes of a Security Policy; Forming Policy; Good Security Policy; Keeping the Policy Flexible; Threats and Vulnerabilities: Unauthorised LAN Access, Inappropriate Access to LAN Resources, Disclosure of Data, Unauthorised Modification of Data and Software, Disclosure of LAN Traffic, Spoofing of LAN Traffic, Disruption of LAN Functions

Identification and Authentication

Marks: 15

Introduction; I&A Based on Something that the User Knows: Passwords, Cryptographic Keys; I&A Based on Something the User Possesses: Memory Tokens, Smart Tokens; I&A Based on Something that the User Is; Implementing I&A Systems; Interdependencies; Cost Considerations; Authentication: One-Time Passwords, Kerberos, Choosing and Protecting Secret Tokens and Pins, Password Assurance, Confidentiality, Integrity, Authorisation

Cryptography

Marks: 15

Introduction to Basic Encryption and Decryption; Techniques used in Symmetric Key Cryptography: Caesar Cipher, Modified Version of Caesar Cipher, Mono-alphabetic Cipher, Homophonic Substitution Cipher, Polygram Substitution Cipher, Poly-alphabetic Substitution Cipher; Problem of Key Distribution in Symmetric Key Cryptography; Public Key and Private Key; Hash (Message Digest): Signing the Digest; Digital Signatures; Symmetric Key Cryptography; Asymmetric Key Cryptography; Pretty Good Privacy

Introduction to Networking

Marks: 13

Introduction; Characteristics of a Computer Network; Advantages of Networking; Classification: Local Loop Network, Local Area Network (LAN), Metropolitan Area Network (MAN), Storage Area Network (SAN), Wide Area Network (WAN), Control Area Network (CAN), Personal Area Network (PAN), Simple PC Based Network; Network Topology: Point to Point Topology, Bus Topology, Star Topology, Ring Topology, Topology, Mesh Topology, Hybrid Topology; Mode of Operation

Reference Books:

1. Andrew S. Tanenbaum, David J. Etherall (2010). Computer Network. Prentice Hall. 5th edition.
2. Brown, H., 2001. *Internet Tools*, Cengage Learning College.
3. Collin, H. M. S., 1997. *Setting up a Web server*, Elsevier.
4. Ellis, J. and Speed, T., 2001. *The internet security guidebook: from planning to deployment*, Academic Press.
5. Furnell, S., 2008. *Securing information and communications systems: Principles, technologies, and applications*, Artech House.
6. Greenlaw, 2005. *In-Line/On-Line*, 2nd ed., Tata McGraw-Hill Education.
7. Guttman, B. and Roback, E., 1995. *An Introduction to Computer Security: The NIST handbook*, DIANE Publishing.

020209: CUSTOMER RELATIONSHIP MANAGEMENT

Full Marks: 100

Customer Relationship Management

Marks: 10

Introduction; History; Types; CRM and Information Technology (IT); CRM Constituencies; Commercial Contexts of CRM; CRM Success Factors; Key Segments for CRM Applications; CRM Service Providers and Consultants; Five Key Cross-Functional CRM Processes; The Need for CRM Strategic Framework; Misunderstandings about CRM; CRM is Here to Stay

The Strategy Development Process

Marks: 12

Introduction; Business Strategy; The Role; Business Vision; Industry and Competitive Characteristics; Focusing on Business Strategy; Customer Strategy; The Role of Customer Strategy; Focusing on Customer Strategy; Aligning Business Strategy and Customer Strategy; CRM Strategy Development

The Value Creation Process

Marks: 9

Introduction; Core and Augmented Offer Add Value; Relationships Add Value; The Importance of Brand Image; The Value Proposition; Customer Profitability; Understanding Future Profit Potential; Customer Acquisition and Its Economics

The Multi-Channel Integration Process

Marks: 14

Introduction; The Development of Electronic Channels; Reviewing Industry Channel Structures; Understanding Structural Change – The Role of Intermediaries: Disintermediation, Reintermediation; Benchmarking Structural Change; Orientation of Intermediaries; Developing Market Structure Maps; General Characteristics of the Different Channel Options; The Role of a Multi-Channel Strategy; Building a Multi-Channel Strategy; Develop Strategic Multi-Channel Objectives; The Information Management Process

The Performance Assessment Process

Marks: 17

Introduction; The Need for a Systematic Approach; Understanding the Key Drivers of Shareholder Results; Shareholder Value, Customer Value, Employee Value and Cost Reduction: Employee Value, Customer Value, Shareholder Value, Cost Reduction Linking Shareholder Value, Employee Value, Customer Value and Cost Reduction; Developing Appropriate Standards, Metrics and KPIs: 5.5.1 Standards, The QCi Customer Management Assessment Tool (CMAT), Customer Operations Performance Centre (COPC) Standard, Metrics., Customer Metrics, People and Process Metrics, Strategic Metrics, Output and Comparative Metrics, Special Metrics Key Performance Indicators; Establishing a CRM Performance Monitoring System; Developing Strategy Maps and Success Maps; Evaluating and Communicating CRM Return on Investment; Relating CRM Performance to Business Performance; Measuring CRM Return on Investment

Organising for CRM Implementation

Marks: 12

Introduction; CRM Readiness Assessment; Maturity Assessment: Reviewing the Stage of Maturity; Identifying Barriers to Success; Readiness Audit: The Overview Audit, The Comprehensive CRM Audit, Determining Key Priorities; Establish a Vision; Utilising Technology Solution: Adopting a CRM Solution; Piloting CRM Projects: Planning for CRM Project Implementation, Establishing Project Priorities and their Direction, Training and Development; The Budget

Business Application and Technology Issues CRM

Marks: 15

Business Application Trends: Increased Consolidation and Mergers among CRM Vendors, Increased CRM Focus on the Small-to Mid-Sized Business Segment, Intelligence Analytical Tools in CRM Solutions, Increased Number of Mobile CRM Offerings and a Move Toward Real-Time CRM, Increased Implementation of CRM Software by CRM Vendors; The Technology Component; A Wireless World; Using People, Process, and Technology to Differentiate: People Issues, The Process Element, Technology Helps; Ten Steps to Effective CRM Implementation; Open Source Technology; Integrated Development Environment (IDE); Software as a Service; Web and Telephony Integration; United Messaging (UM); Enterprise Service Buses (ESB); Profit Optimisation Technology; Creating a CRM Business Case; CRM Software Selection Tips: Technical Feature Requirements; Writing the CRM System Specs

The Future of CRM

Marks: 11

Introduction; CRM: The Evolving Real-Time Enterprise; Government CRM; RTE: Future, A Natural Progression, Vision, An RTE Timetable, Vendors; Questions to Ask CRM Software Providers; Tips for Negotiating with CRM Vendors; CRM Software Selection Tips 181; CRM; Steps for Creating a Real-Time Enterprise; The Future: Real Time; Trade Shows/Conferences

Reference Books:

1. Rogers, M. and Peppers, D., 2010. Managing Customer Relationships: A Strategic Framework, 2nd ed., Wiley.
2. Shanmugasundaram, S., 2008. Customer Relationship Management: Modern Trends and Perspectives. Prentice-Hall of India.
3. Srivastava, J. and Wang, J., Lim, E. and Hwang, S., 2002. A case for Analytical Customer Relationship Management.
4. Sugandhi, R. K., 2003. Customer Relationship Management. New Age International.
5. Wellington, P., 2010. Effective Customer Care, Kogan Page Limited.
6. Anderson, K. and Kerr, C., 2002. Customer relationship management. McGraw-Hill Professional.

Elective 3 (Choose any one from elective)

0202034: STRATEGIC IT MANAGEMENT

Full Marks: 100

Concept of Strategy

Marks: 10

Introduction; Meaning; Nature; Essence; Strategy via Policies and Tactics; Strategy V/S Programmes, Procedure and Rules; Levels; Importance; Process; Strategic Intent; Environmental and Organisational Analysis; Identification of Strategic Alternatives; Choice of Strategy; Implementation of Strategy; Evaluation and Control

Strategic Framework

Marks: 8

Introduction; Strategic Intent; Vision; Core Values and Core Purpose; Mission; Business Definition; Objectives and Goals; Environmental Analysis; Broad Dimensions of External Environment; Pestel Framework; Mckinseu's 7s Framework; General Environment and Organisations' Strategy; Environmental Scanning

Competitive Forces

Marks: 12

Introduction; Competitive Environment; Porter's Five Forces Framework: Threat of New Entrants, Bargaining Power of Suppliers, Bargaining Power of Customers, Threat of Substitutes, Competitive Rivalry; Process for Analysing the External Environment.; Internal Analysis Introduction; Types of Resources; Strategic Importance of Resources; The Critical Success Factor (CSF); The Value Chain Framework; The Balance Scorecard; Quantitative Assessment; Qualitative Assessment; Comparison Standards

IT Strategy and Enterprise Transformation

Marks: 14

Introduction; The Value of IT: Value Driver for the Company; IT Strategy: Deriving IT Strategy from Corporate Strategy, Using IT as an Enabler for Business, Business Processes, Increasing sales with CRM technologies Using IT for Value Creation; Enterprise Transformation: Planning and Controlling IT-driven Enterprise Transformation, Risk Management, Carrying Out Benefit Management.

IT Merger Integration, IT Carve-Out and IT Governance

Marks: 15

Introduction; Fostering External Growth and Disinvestment with IT: Successful Mergers With IT Merger Integration, Ensuring Capacity to Act through Rapid IT Integration, Realising Cost Cutting And Synergies, Fostering Long-Term External Growth Strategies, Divesting Operations Successfully with IT Carve-Out; Controlling Performance : Value-Oriented IT Management; IT Governance: Creating the Organisational Framework for Value Enhancing IT: Separating the Organisation of IT Demand and IT Supply, Establishing Centralised and Decentralised Areas of IT Responsibility and IT Control Structures, Defining IT Management Processes

IT Planning and IT Performance Management

Marks: 14

Introduction; IT Planning: Using Cost and Performance Accounting as a Basis for Planning, Establishing Procedural Frameworks for Best Practice, Operation and IT Projects, Identifying Cost Reduction Potential for IT Operation and IT projects, Reducing IT Operating Costs through Benchmarking, Reducing Process Costs by Using Synergies, Prioritising Planned Projects.; IT Performance Management: Deriving IT goals and Key Performance Indicators (KPI) from Corporate Strategy, Anchoring IT Performance Management within the Company

IT Optimisation and In-House IT Service Providers

Marks: 12

Introduction; Key Motives for Spinning off Internal IT Service Providers; Strategically Aligning and Spinning-off the IT Provider; Determining 'Strategic Parameters' for the IT Provider; Stipulating Strategic Rules for Cooperation; Expanding, Insourcing, or Divesting the IT Provider

IT Outsourcing and IT Off-shoring

Marks: 15

Introduction; Reducing Vertical Integration with IT Outsourcing; Defining the Objectives of IT Outsourcing and Identifying Suitable IT Services; Developing the Outsourcing Partnership: Selecting a Suitable Outsourcing Partner, Using the Outsourcing Contract to Constitute a Long-term Partnership; Actively Managing the Outsourcing Partnership; Using Factor Cost Advantages by IT Off-shoring: Developing a Corporate IT Off-shoring Strategy, Evaluating Risks and Opportunities of a Location, a Suitable Off-shoring Model

Reference Books:

1. Alex, M., *Strategic Management*. 3rd ed. Irwin Mcgraw Hill.
2. Bacal, R., 2011. *Performance Management 2/E*. 2nd ed. McGraw-Hill Professional, 2011.
3. Calder, A., 2005. *IT Governance: Guidelines for Directors*. IT Governance Ltd.
4. Thompson, J.L., 1997. *Strategic Management: Awareness and Change*. International Thompson Business Press, London.

5. Tozer, E.E., 1996. *Strategic IS/IT Planning*. Butterworth-Heinemann.
6. Turban, E. and Volonino, L., 2004. *Information Technology for Management: Improving Strategic and Operational Performance*. 7th ed. John and Wiley Sons.
7. Wiggers, P., Kok, H. and Wit, M.D., 2004. *IT Performance Management*. Elsevier Butterworth-Heinemann.

0202032: TOTAL SUPPLY MANAGEMENT

Full Marks: 10

Supply Chain Management

Marks: 12

Introduction; Supply Chain; Objective; Importance; Activities; Decision Phases in a Supply Chain; Process View of Supply Chain; Linking Competitive(business) and Supply Chain Strategies; Supply Chain Drivers; Barriers of Supply Chain Management; Scope of Supply Chain Activities; Marketing Mix Model

Coordination in a Supply Chain

Marks: 10

Introduction; Lack of Supply Chain Coordination; Bullwhip Effect; Managerial Levers; Building Strategic Partnerships and Trust; Continuous Replenishment Program (CRP) and Vendor Managed Inventory (VMI); Collaborative Planning, Forecasting and Replenishment (CPFR)

Material Management

Marks: 12

Introduction; Concepts; Components; Purchasing Methods; Procedure for Issue; Maintenance, Repair and Condemnation of Equipment

Logistics

Marks: 12

Introduction; Development of Logistics; Components of Physical Distribution Management(PDM); The Systems or 'Total' Approach to PDM

Distribution Network Design

Marks: 13

Introduction to Supply Chain Management; Role of Distribution Network; Factors Influencing Distribution Network Design; Design Options for a Distribution Network; Distribution Networks in Practice; Supply Chain Model

Transportation System

Marks: 15

Introduction to Transportation; Modes; Modal Competition; Passengers or Freight; Growing Divergence; Role of Transportation in Society; Global Transport Logistics; Refinement of Transport and Warehousing Management; Channelisation - Multi-Modal Transport Operations; Method of Selection for the Transport Mode; Routing and Scheduling; The Indian Transportation Environment; Futuristic Direction in Transportation

Sourcing and Pricing

Marks: 12

Introduction; Sourcing; In-house and Outsource; 3PL and 4PL; Supplier Scoring and Assessment; Supplier Selection; Pricing and Revenue Management for Multiple Customers

Logistic Information System

Marks: 14

Introduction; Methodological Approach; Uses of Information Technology in the Supply Chain; Enterprises Resources Planning; Customer Order Cycle; Extent of the Use of IT Devices

Reference Books:

1. Materials and Equipment Management, Module 12, NIHFWS, New Delhi, 1993.
2. Hugos M. H., 2006. Essentials of supply chain management: Essentials (John Wiley) Series, John Wiley and Sons, 2nd ed., p.290.
3. Joris J. A. Leeman, 2010. Supply Chain Management, BoD – Books on Demand, ISBN
4. Mentzer J. T., 2001. Supply Chain Management, Sage Publications, 2nd ed., p.512.
5. 2004. Fundamentals of supply chain management: twelve drivers of competitive advantage, Sage Publications, p.293.
6. Mohanty R.P., & Deshmukh S.G., 2005. Supply Chain Management (Theories & Practices), Dreamtech Press, p.376.

0202083: PROJECT MANAGEMENT

Full Marks: 100

Introduction to Project Management

Marks: 8

Introduction; What is a Project?; The Characteristics; Sub Projects; What is a Programme?; Programme Management; Project Management; Similarities between Programme Management and Project Management; Differences

Key Roles in Project Management

Marks: 14

Introduction; The Project Steering Team (PST); The Project Steering Team Manager; The Stakeholders; Identifying Stakeholders; The Sponsor; The Programme Manager; The Functional Manager; Important Terms in Project Management: Responsibility, Authority, Accountability; Qualities of an Effective Project Leader

Project Planning and Processes

Marks: 15

Introduction; Project Life Cycle and Process Flows; Characteristics; Project Planning and Scoping; The Main Project Planning Processes: The Identification Process, The Review Process, The Analysis Process; Planning Tools and Estimation: Planning Tools, Planning Estimation; Estimation Approaches and estimation tools: Estimation Approaches, Estimation Tools; Risk Management: Components

Project Management Essentials

Marks: 16

Introduction; Characteristics of Project Mindset; Process Groups: Process Interactions, Processes Interaction Initiating processes; Customisation; Project Monitoring and Control; Project Progress Control: Approvals, Change Control, Changing Project Management Process, Tools for Changing a Process, Project Closure, Completion of Activities and Benefits, Post Implementation Review, Tools for Post Implementation Review, Final Project Reporting and Documentation

Concepts of Managing Conflict, Quality and Information System

Marks: 16

Introduction; Concept of Managing Conflicts, Quality and the Information System: 1Conflict Management, Communication Requirement and Capabilities, Quality Management, Project Management Information System; Modern Trends in Project Management; Perception: Project Development Process Cycle, Macro Issues, Evolving Key Successes

Factors Upfront, Empowerment Title, Partnering Decision Making, Management by Exception, Knowledge Factor (K); The Modern Mantra of Project Management; New Horizon in Project Management

Project Development and Modern Trends in Project Management Perception

Marks: 10

Introduction; Project Development Process Cycle; Modern Trends in Project Management Perception; Recent Revolutions in Project Management

Organisational Issues in Project Management

Marks: 11

Introduction; Organisational Change: Evolutionary Change, Revolutionary Change; Traits of Professional Manager; Bringing about Organisational Change in the Project Management Scenario

Project Risk Management

Marks: 10

Introduction; Planning for Project Surprises-Coping with Risk: When to Perform Risk Management?; Risk Management Planning; Risk Management Process; Overview of Risk Management

Reference Books:

1. 2004. A Guide to The Project Management Body of Knowledge, 3rd ed., Project management institute.
2. Adams, N. S. & Kirchhoff, J. R., 1982, Conflict management for project managers, 1st ed., project management institute.
3. Baca, C., 2005, Project Manager's Spotlight on Change Management, Jossey Baso.
4. Callahan, K. R. & Brooks, L. M., 2004. Essential of Strategic Project Management, Wiley.
5. Cleland, D. I., 2004, Field Guide to project management, 2nd ed., Wiley Publication,
6. Cooper, D. F., Grey, S., Raymond, G. & Walker, P., 2004. Project Risk Management Guideline: Managing Risk in Large Project and Complex Procurement, 1st ed., Wiley Publication

Elective 4 (Choose any one from elective)

0202031: IT LAWS AND PATENT

Full Marks: 100

General Overview of Intellectual Property

Marks: 10

Introduction; The Concept; Different Categories of IP Instruments: Copyright, Trademarks and Service Marks, A Geographical Indication (GI), Industrial Design, Patents, Layout Design (topography) of Integrated Circuits, Undisclosed Information; Rationale Behind Intellectual Property; Rights of the Owner of the IP, Other Individuals and the Society – Striking A Balance; Enforcement of IPRs; IP and the Constitution of India

Intellectual Property Rights in India

Marks: 9

Introduction; History of IP Legislation: Patents, Trademarks, Designs, Copyright; Overview of IP Law in India: The Indian Patent Law, Indian Copyright Law, Indian Trade Mark Law, Indian Designs Law; IP Acts Enacted By India; Major International Treaties Signed By India

Copyright: An Introduction to History and Evolution of Copyright

Marks: 9

History and Evolution; Works Protected: General Conditions for Protection, Which Works are Protected?; Rights in Copyright: Economic Rights, Moral Rights; Term of Protection; Limitations & Exceptions; Ownership and Transfer of Copyright

Patent Basics

Marks: 14

Introduction; Conditions of Patentability: Patentable Subject Matter, Industrial Applicability (utility), Novelty, Inventive Step (Non-Obviousness), Disclosure of invention; Drafting and Filing a Patent Application: Identification of Invention, Practical Aspects of Drafting Patent Applications; Processing of Patent Application: Examination as to Form, Examination as to Substance, Publication of Notice and Opposition, Grant and Publication

Patents, Designs, Trademarks and CGPDTM

Marks: 15

Introduction; Office of the Controller General of Patents, Designs and Trademarks (CGPDTM): The Patents Office, Industrial Designs Wing; Patent Information System (PIS): Patent Search Services, Patent Copy Supply Service, Trademarks Registry, Geographical Indications Registry (GIR), Awareness Programmes; Trademark Rules and Procedure; Designs: Rules and Procedure: Benefits of Design Registration, Essential Requirements for Registration

Patent Cooperation Treaty (PCT) and Patent Law Treaty (PLT)

Marks: 17

Introduction; International Patent; Basic Objectives of PCT: Patent Cooperation Treaty (PCT) and Patent Law Treaty (PLT), Filing an International Application, International Search, International Publication, International Preliminary Examination, National Phase; Advantages of the PCT System: Advantages for the Patent office, Advantages for the Applicant, Advantages for the National Economy and Industry; Provisions of the Patent Law Treaty (PLT) and the Regulations: Filing Date Requirements, Standardised Application and Forms., Restriction on Mandatory Representation, Restriction on Requiring Evidence, Restriction on Requirements to Submit a Copy of an Earlier Application and Translation thereof, Single Communication, Relief in Respect of Time Limits and Reinstatement of Rights, Correction and Addition of Priority Claim and Restoration of Priority Right, Paper and Electronic Communication

Overview of the U.S., European, and Japanese Patent Systems Structure

Marks: 14

Introduction; Overview of the United States Patent System: Patent by US Norms, Term of US Patent, Criteria for Patentability, Contents of Patent Application, Processing of Patent Application, Comparison of the U.S. Patent System with Other Patent Systems; European Patent Convention: Structure and Procedures, Comparison with US Patent System; Japanese Patent System: Comparison of Japanese Patent Systems with US Patent System

Role of Patents in Promoting Invention, Innovation and Technology Development

Marks: 12

Introduction; Justification for Patents; Intellectual Property in Knowledge Economy; Patents as an Instrument of Rights and Privileges: Proprietary Rights and Privileges, Patent Applications as Gold Mine of Information; New Technologies and Patents: Computer Software Protection and Patent, Biotechnology and Patents, Patent and Technology Development; Licensing Expertise

Reference Books:

1. Adelman, M. J., Rader, R. R. & Klancnik, G. 2007. *Patent Law in a Nutshell*. 1st ed., Thomson West.
2. Attorney, R. S., 2012. *Patent, Copyright & Trademark: An Intellectual Property Desk Reference*. NOLO.
3. Bouchoux, D. E., 2012. *Intellectual Property: The Law of Trademarks, Copyrights, Patents, and Trade Secrets*. 4th ed., Delmar Cengage Learning.
4. Cohn, R. & Russell, J. 2012. *Patent Cooperation Treaty*. VSD.
5. Fishman, J. D S., *The Copyright Handbook: What Every Writer Needs to Know*. 11th ed., Nolo.

6. Gilbert Guide. 2004. *The Entrepreneur's Guide to Patents, Copyrights, Trademarks, Trade Secrets & Licensing*. Berkley Trade.
7. Grissom, F. & Attorney, D. P., 2008. *Inventor's Notebook: A Patent It Yourself Companion*, 5th ed. Nolo.

0202028: BUSINESS PROCESS RE-ENGINEERING

Full Marks: 100

Introduction to Business Process Re-Engineering

Marks: 13

Introduction; Data Processing Concepts: Editing, Field Editing, Office Editing; Classification and Coding: Categorisation and Classification, When to Classify, Categorisation Rules, Number of Categories, Coding, Transcription; Methods of Transaction: Tabulation, Electronic Computers, Construction of Tables; Components of a Table; Principles of Table Construction; Frequency Distribution and Class-intervals; Analysis and Interpretation of Data; Drawing Conclusions and Recommendations: Graphic Representations, Meaning and Importance, Types and General Rules, Line Graphs, Histogram, Frequency Polygons, Ogive, Lorenz Curve, Bar Charts, Pie or Circle Charts, Pictograms; Graphic Representations

File Processing System

Marks: 11

Introduction; Window: What is a Window? Parent Windows and Owner Windows, Window Handles, Screen and Window Coordinates; Basic File Management in Windows XP, Vista and 7: FILES and FOLDERS, Simple File Setup, Creating Folders, Viewing and Sorting File Lists, The Path of a File, Path in Windows Vista and Windows 7; Organising Files and Folders: Windows Explorer in Windows XP, Windows Explorer Window in XP, The Explorer Window in Windows 7, Moving files using Windows Explorer (XP) or the Explorer Window (Windows 7); Letter Wizard

Spreadsheet

Marks: 18

Introduction; Spreadsheet; Getting Started; Some Background; Working of Spreadsheets: Helpful hints while using the spreadsheet, Moving around in the spreadsheet, Identifying the active cell's coordinates, Selecting a range (group) of cells, Blanking Out a Cell or Cells in the Spreadsheet, Editing the Data in the Entry Bar; Setting Up Labels for your Gradebook Template: Aligning data in spreadsheet cells, Entering the column and row labels, Entering "dummy" scores, Adjusting the Width of Columns, Changing the Alignment of the Column Labels, Creating and copying formulas, Creating the formula.; Copying and Pasting Formulas: Copying the formula, Pasting the formula; Relative References; Setting up the Percentage Formula; Using Logical functions; Absolute References; Setting the Cell Attribute for the PCNT column; Checking Out the Formulas; Entering Names and Scores for Each Student: Changing the name of the template document, Entering the student names, Entering the scores for each student; Making Changes to your Gradebook: Inserting columns, Deleting (cutting) rows and columns, Printing your gradebook, Saving a backup copy of your work, Close the excel spreadsheet program; A Word about Templates and Stationery Documents

Introduction to Database

Marks: 14

Introduction; Historical View of Key Database Developments; Relational Database Model; SQL; Object-based Database Models; Classes and Attributes; Subtype and Inheritance; Object-Relational Database Model; An Overview of Federated Database Systems

SQL Server

Marks: 10

Introduction; Defining a Database; Building a Relationship; Functions with Database: Creating Tables, Building a View, Creating Stored Procedure; XML Functions

Technological and Organisational Enablers of Business Process Reengineering

Marks: 12

Introduction; BPR: A Process Change Model; Functional Coupling of Business Processes; Changing Functional Coupling Patterns of Processes through BPR; Strategic Paths for Process Reconfiguration; Enablers of Process Change; Information Technology Enablers; Organisational Structure Enablers; BPR and Organisational Change; Reengineering Model Guidelines

The Place of Information Technology in BRP

Marks: 12

Introduction; Business Strategy and the Management of Change; Integrating Information Systems Strategy and Business Strategy; A Multi-Faceted Approach to Business Change; Organisational Environment; Business Strategies & Processes; Information Infrastructure; Organisational Learning

Automation, Business Process Reengineering and Client Server Technology

Marks: 10

Introduction; BPR-An Historical Perspective Background; The Industrial Era; The Information Era; The Link between BPR and Information Technology: General Information Technology; The New Organisational Structure

Reference Books:

1. Friedrichsen, L., 2007. Microsoft Office Access 2007-Illustrated Complete, Cengage Learning.
2. Gipp, J., 2007. Spotlight on Spreadsheets, 2nd ed. Cengage Learning.
3. Hui-Liang Tsai, 2003. Information Technology and Business Process Reengineering: New Perspectives and Strategies, Greenwood Publishing Group.
4. Khosrowpour, M., 2002. Issues and Trends of Information Technology Management in Contemporary Organizations, Idea Group Inc (IGI).
5. Khosrowpour, M., 2006. Cases on Information Technology and Business Process Reengineering, Idea Group Inc (IGI).
6. Landon C. G., 2002. Business Process Re-engineering: A Management Handbook, 3rd ed., Vertical Systems.
7. Langer, M. A., 2007. Analysis and Design of Information Systems, 3rd ed. Springer.

0202033: WEB DESIGN AND INTERNET BASED APPLICATIONS

Full Marks: 100

Internet and Internet Connectivity

Marks: 10

Introduction; Internet; Growth; Safeguards; Client Server System: Servers Should be Powerful and Reliable, Intricacies Involved, Active Close and Active Open, Sockets; Internet Domains and Addresses Name System; TCP/IP Internet Domain Names: Official and Unofficial Internet Domain Names, Mapping Domain Names to Addresses, Domain Name Resolution, Name Caching, Time to Live, Abbreviation of Domain Names; Dialup Networking: Access Criteria; The Internet Service Provider (ISP); Newer Technologies

Introduction to Web Design

Marks: 7

Introduction; Basics; Elements of Good Design: The Elements of Design, The Principles, The Web is Not Print

Basics of Web Designing

Marks: 10

Introduction; Methodology; Getting Started with Web Designing; Step 1: HTML; Step 2: WYSIWYG Editors; Recommendations for Software and Tool for Designing Web; Step 3: Hosting: Free Host Servers, Paid Host Servers, Step 4: Publish (upload)

Internet Services

Marks: 15

Introduction: The Internet; World Wide Web (WWW); Web Browsing: Browser Software Access The Web, Start Up a Web Browser, Using the Web Browser, Bookmarks, Cookies, Browser in Detail, The Elements of Web Navigation; News groups: News Group Hierarchies, Types of Newsgroups, Binary Newsgroups; Mailing Lists; Chat Rooms; E-Mail: E-Mail Operation; Internet Fax; File Transfer Protocol (FTP): FTP Commands, FTP File Types, FTP Login; TELNET

HTML

Marks: 17

Introduction; HTML; Formatting: Text Formatting, Citations, Quotations, and Definition Tags, Character Entities; Hyperlinks; URLs; Background Graphics: Colour; External Images, Sounds, and Animations; Frames; Tables: Tables for Non tabular Information; Lists; Forms; Image maps: The Usemap Attribute in An IMG Element; The Common Gateway Interface (CGI): Server-Side Processing, Structure of a CGI Script, CGI For Mail, Security; Cascading Style Sheets (CSS): Adding CSS to HTML Documents

Client and Serverside Scripting

Marks: 12

Introduction; Java Server Pages (JSP): JSP Environment, Using JSP Tags, Javabeans, Implicit Objects; JavaScript: Elements of JavaScript, JavaScript Objects, Document Object Model (Dom); Web Technologies

Web 2.0

Marks: 15

Introduction: Web; The Internet as a Platform; Social Networks and User Participation; Significance; Web 2.0 in the Workplace: Enterprise 2.0; Hackers have Changed; Organisations are not Prepared for Web 2.0 Threats; How Security Challenges Change with Web 2.0?; Compromised Websites Malware Access: New Client-Side Technologies, XML Syndication : Feeds for Wikis and Blogs; About Trackback: Mashups, Data Leak Vulnerabilities; Blue Coat Web 2.0 Layered Security Solutions; Preventing Malware: Layered “Defense in Depth”; Dynamic URL Filtering with WebPulse and WebFilter: WebPulse Ecosystem URL Categorising, Web Filter: Filtering & Blocking Unwanted Web Content

Dreamweaver

Marks: 14

Introduction; Getting Started; Site Management: Restricting Access to Your Pages; Creating a New Folder; Creating a New Page: Entering Text, Page Title, Saving and Testing Your Page, Inserting Images; Editing Images; Adding Links within the Page, to other Pages and to Files: Linking within the Page; Tables; Linking to Other Resources: HTML Editing in Code View: Adding Text, Creating Lists, Linking to Sites, Adding Comments, Roundtrip HTML Overview, Cleaning up HTML, Clean up Word HTML

Reference Books:

1. Adobe Systems, 2007. Adobe Dreamweaver CS3: Classroom in a Book, Peachpit Press.
2. Basham, B., Sierra, K., Bates, B., 2008. Head First Servlets and JSP: Passing the Sun Certified Web Component Developer Exam, 2nd ed. O’Reilly Media, Inc.
3. Biafore, B., 2011. QuickBooks 2012: The Missing Manual, O’Reilly Media, Inc.

4. Bollinger, G., Natarajan, B., 2011. JSP: A Beginner's Guide, Osborne/McGraw-Hill.
5. Cole, D., 2000. Dreamweaver, iUniverse.
6. Freeman, E., Freeman, E., 2005. Head First Html with CSS & XHTML, O'Reilly Media, Inc.
7. Prasad, R. A., Buford, F. J., Gurbani, V. K., 2011. *Future Internet Services and Service Architectures*, River Publishers.