

उच्च शिक्षा विभाग, म.प्र. शासन

स्नातक स्तर पर सेमेस्टर पद्धति के अन्तर्गत एकल प्रश्न पत्र प्रणाली अनुसार पाठ्यक्रम
केन्द्रीय अध्ययन मण्डल द्वारा अनुशंसित तथा म.प्र. के महामहिम राज्यपाल महोदय द्वारा अनुमोदित

Department of Higher Education, Govt. of M.P.

**B.Com (Graduate) Semester wise Syllabus as recommended by
Central Board of Studies and approved by the Governor of M.P.**

Session / सत्र	2014-15
Class / कक्षा	PGDCA
Semester / सेमेस्टर	First
Subject / विषय	Fundamentals of computer
Title of the paper / प्रश्न पत्र का शीर्षक	
Compulsory / अनिवार्य Optional / वैकल्पिक	Compulsory / अनिवार्य
Maximum Marks :	अधिकतम अंक :

Particular / विवरण

Unit -1	Number System : Decimal, Binary, Octal, Hex Representations & Their Conversions. Coding System : BCD, ACCESS-3, GRAY, ASCII, EBCDIC, Logic Gates.
Unit- 2	Block Diagram & Components of Computer System: CU, ALU, Primary Memory: RAM-SRAM & DRAM, ROM-PROM, EPROM, EEPROM, Cache Memory Unified & Split. Secondary Memory: Magnetic-Floppy, Hard Disk, Magnetic Tape, Optical-CD, VCD, CD-R, CD-RW.
Unit - 3	History & Development of Computer, Generations of Computers, Types of Computers, Pentium & Power PC. Bus and its Types, I/O Port, Interconnections, Parallel Processing RAID.
Unit - 4	Input Devices: Keyboard, Mouse, Trakball, Joystick, Scanner, Digital Camera, MICR, OMR, Bar-Code Reader, Voice Recognizer, Light pen, Touch screen. Output Devices : Monitors- Characteristics & Types, Digital, Analog, Size, Resolution, Pixel, Video Standard-VGA, SVGA, XGA. Printers- Character Impact & Character NonImpact, Line Impact & Line Non Impact, Plotters, Speakers.
Unit - 5	Software : System & Application Software & Their Types. Languages : Machine, Assembly & High Level languages, Generations of Languages. Language Processor : Assembler, Interpreter, Compiler, Linker, Loader & Their Types.

Required Readings:

1. Leon : Fundamentals of Information Technology.
2. Abhay Jain Chandwani : Fundamentals of Computers
3. Kamal Prakashan: Fundamentals of Computers.
4. Malvino & Leach: Digital Principals & Applications.
5. Govind Rajalu: Pe operation & Maintenance.

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Session / सत्र	2014-15
Class / कक्षा	PGDCA
Semester / सेमेस्टर	First
Subject / विषय	C-Programming
Title of the paper / प्रश्न पत्र का शीर्षक	
Compulsory / अनिवार्य Optional / वैकल्पिक	Compulsory / अनिवार्य
Maximum Marks :	अधिकतम अंक :

Particular / विवरण

Unit - 1	Programming Languages and Language Processors:- Machine Language, Assembly language, Procedural Oriented, Problem Oriented & Natural Languages, Generations of Programming Languages. Structured Programming, Assembler, Compiler, Interpreter, Linker, Loader, Editors. Different Tools for Programming- Features, Advantages & Disadvantages of Algorithms, Flowchart, Decision Table and Executions Table.
Unit- 2	Introduction to C Language:- History of 'C' Language, Structure and Rules for 'C' program. Header Files. Main (). Directory options for running C program. Editing Keys. Basic Terms of C: Tokens, Variables, Expressions, Constants & their types. Data Type, Storage classes, I/O Functions, Operations and Their types.
Unit - 3	Control Statements- (1) Decision control: IF-Else, (2) Case control: Switch, (3) Loop control: While. Do-While. For & Comparison among them. Function: Function Prototype, Definition, Parameter. Passing. Recursion and their types. Arrays - One-dimensional, Two-dimensional and Multidimensional Arrays. Structure and Union: Declaration, Initialization and Comparison between them.
Unit - 4	Dynamic Memory Allocation: Heap, Malloc, Calloc, Free (). Pointer variable, Address operator, Pointer arithmetic, Pointer to function, pointer to pointer to Array. Pointer to structure. Self referential structure, Call by value and Call by reference. Drawback of pointer. Storage classes Library function.
Unit - 5	Enumerated data type files, Types of files in C, Defining, Opening and Closing a file. Input-Output operation on files. Different file access modes, Creation of files using structure. File-copy and Merging of files. Random Access to files. Error handling during I/O operation.

Required Readings:

1. I: Balaguruswami : Programming with C
2. Denis Ritchie: Programming in C
3. Kamal Prakashan: Playing with C

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Session / सत्र	2014-15
Class / कक्षा	PGDCA
Semester / सेमेस्टर	First
Subject / विषय	Operating System
Title of the paper / प्रश्न पत्र का शीर्षक	
Compulsory / अनिवार्य Optional / वैकल्पिक	Compulsory / अनिवार्य
Maximum Marks :	अधिकतम अंक :

Particular / विवरण

Unit -1	Introduction to OS: Definition, Types. Functions. Features: Batch Processing. Multiprogramming, Multiuser, Multitasking. Multiprocessing. Process: Life Cycle. PCB. IPC. Critical section problems. Semaphore. Monitors.
Unit- 2	Deadlock: Reasons. Methods for Removing deadlocks. Bankers Algorithm. Process Scheduling: Preemptive and Nonpreemptive scheduling like: FCFS. SJF. round Robin. Priority Based. MLQ. RTS: Real Time OS and its scheduling methods.
Unit - 3	Memory Management- Static and Dynamic memory management. Internal & External Fragmentation Problem, Paging. Segmentation, demand paging. File & Disk Management: File and Directory concepts and their types. File allocation Methods. Free space management methods. Disk Scheduling Methods.
Unit - 4	Dos (Disk Operating System): Dos Basics: Booting, Post, BIOS, FAT, COM, EXE & Batch File. Pipes. Filters. DOS Commands: Internal : DIR, MD, CD, RD, COPY, DEL, REN, VOL. VER. DATE. TIME. CLS. PATH. TYPE. PROMPT. External: CHKDSK, DOSKEY, XCOPY, MOVE, TREE, DELTREE, LABEL. APPEND, FORMAT, UNFORMAT. PRINT. FDISK. SORT. MORE. ATTRIB. EDIT. SYS. DISKCOPY. DISKCOMP, BACKUP. RESTORE.
Unit - 5	Linux: History & Features. Linux Structure. File System. Various flavours of Linux. Process creation and process identifiers. Profile and login files. Kernel & Shell. Linux Commands: ls, cat, who, who am i, cal, clear, date, banner, be, ed, mkdir, rm, mrdire. tty, ep, my, chmod, chgrp, chown, cmp, find, ps, kill, we.

Required Readings:

1. Bhai : Operating System
2. Achul Godhole : Operating System
3. Tanunbum : Operating System
4. Kamal Prakashan: Concept of Operating System
5. BPB Publication: Linux Complete

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Session / सत्र	2014-15
Class / कक्षा	PGDCA
Semester / सेमेस्टर	First
Subject / विषय	PC Software
Title of the paper / प्रश्न पत्र का शीर्षक	
Compulsory / अनिवार्य Optional / वैकल्पिक	Compulsory / अनिवार्य
Maximum Marks :	अधिकतम अंक :

Particular / विवरण

Unit -1	Windows 95/98: Features Desktop, Taskbar, Start Menu, My Computer, Recycle Bin. Accessories: Calculator, Notepad, Paint, Wordpad, Windows, Explorer & Folder, Multiple users features of Windows, Dial-Up Networking. Various Types Files & Applications Format: Pdf., Avi., Wav., Zip., Wmf., Mp3., Mpe., Mpa., Mti.
Unit- 2	Word Processor- MSWORD- Introduction to MS Word: Features, Creating, Saving, Opening, Deleting files in Word. Interface Toolbars. Ruler, Menues, Keyboard shortcut, Printing document, Editing document with Edit Menu. Formatting Documents: Paragraph formats, Aligning Text & Paragraph. Borders & Shading, leaders & Footers, Macros.
Unit - 3	Spreadsheet-MS Excel- Worksheet: Features, Creating, Saving, Opening, Deleting, Quitting. Toolbars:- Menus, Keyboard Shortcuts. Workign with single and multiple workbook: Copying, Adding, Moving, Deleting. Working with Formulas & Cell referencing: Autosum. Copying formulas, Absolute & Relative addressing.
Unit - 4	MS EXCEL : Formatting Worksheet:- Autoformat, alignment, Character styles, Column width. Date format, Borders & Colours, Currently sign. Previewing & Printing worksheet: Page setting, Print titles, Adjusting margins, Page break. Headers adn Footers. Graphics & Charts: Using Wizards, Various charts type formatting grid lines. & Legends. Previewing & Printing charts. Functions: Database, Date & Time, Maths & Trigonometry, Statistical. Text and Logical.
Unit - 5	Presentation Graphics- MS Power Point- Features and Basic terms, Creating presentation by using Wizards. Toolbars, Menus & Different Views. Working with Slides: Create, Move, Copy, Delete, Duplicate, Lay-Outing of Slide, Zoom. Printing Presentation- Printing Slides, Notes, Handouts, and Outlines.

Required Readings:

1. Office 97 Internative Course by Greg Pen.....Techmedin
2. PC Software- Kamal Prakashan
3. Microsoft Office 97 by Gini Courter & Annetic Marquis. BPB

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Session / सत्र	2014-15
Class / कक्षा	PGDCA
Semester / सेमेस्टर	First
Subject / विषय	System Analysis & Design
Title of the paper / प्रश्न पत्र का शीर्षक	
Compulsory / अनिवार्य Optional / वैकल्पिक	Compulsory / अनिवार्य
Maximum Marks :	अधिकतम अंक :

Particular / विवरण

Unit -1	System and its types, Different Software Engineering Models, Preliminary Investigation for System, Feasibility Study and its types, Cost/ Benefit Analysis and its methods, Information finding Methods.
Unit- 2	Analysis: Tools for Structured Analysis: Flow Chart. DFD. Data Dictionary. Decision Tree, Decision Table.
Unit - 3	Design: Input Output, Form, Database, File. Testing: Black Box, White Box, Alpha, Beta, Unit, Integration, and System. SQA.
Unit - 4	Implementation: Methods of Deployment, System Conversion, User Training Post Implementation: Planning, Maintenance, Extensibility, Replacement, Case-Study for a Project.
Unit - 5	UML (Unifying Modeling Language) : Concept of UML. UML Symbols, Basic UML Terms. UML Diagrams: Use-Case, Sequence, Collaboration, Object, Class, Package, State Chart, Activity etc.

Required Readings:

1. System Analysis & Design By Awad
2. Software Engineering By Pressman
3. Software Engineering by James S. Sen
4. SAD & Software Engineering By Kamal Prakashan

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Session / सत्र	2014-15
Class / कक्षा	PGDCA
Semester / सेमेस्टर	Second
Subject / विषय	Web Designing
Title of the paper / प्रश्न पत्र का शीर्षक	
Compulsory / अनिवार्य Optional / वैकल्पिक	Compulsory / अनिवार्य
Maximum Marks :	अधिकतम अंक :

Particular / विवरण

Unit -1	Webpage, Websites, HTML: HTML Tags Related To: Text, List, Tables, Frames Hyperlink. Multimedia, Style Sheets.
Unit- 2	HTML: Event Handling, Meta, DIV & Span tags, DOM. DHTML (Without Scripting Language), Introduction to XML with examples.
Unit - 3	Java Script: Data Types, Operators, Keywords, Control Structures and Loops, Arrays Inbuilt Functions and their types.
Unit - 4	Java Script: User defined functions, calling function by HTML, Object properties & Methods. Hidden Fields & Cookies, Design a Website with dynamic Web Pages.
Unit - 5	Client-Server Computing, Distributed Computing, Introduction to ASP, JSP, CGI, PERL. WML, WAP.

Required Readings:

1. HTML in 24 Hours- Tech Media.
2. Java Script Complete-BPB
3. Programming in Web Designing By : V. Jain
4. Web Designing- Kamal Prakashan

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Session / सत्र	2014-15
Class / कक्षा	PGDCA
Semester / सेमेस्टर	Second
Subject / विषय	Visual Basic Programming
Title of the paper / प्रश्न पत्र का शीर्षक	
Compulsory / अनिवार्य Optional / वैकल्पिक	Compulsory / अनिवार्य
Maximum Marks :	अधिकतम अंक :

Particular / विवरण

Unit -1	Introduction: Concept of Front End, Back End, GUI, About VB Basic of VB: New Project Window, VB Project, IDE, Different Components of IDE: Project Explorer, Property Window, Tool Box, Form Layout Window, Object browser: Tool Box. Menu Editor, Image List, Form Design Run Time & Design Time Properties. Menus: File Menu, Format Menu, Help Menu.
Unit- 2	Token's : Variables, Constants, Data Types. Statements: Control Statements. Coding Statements & Style i.e. E.D.P. Different Types of Procedure's. Input/Output Statement: (MsgBox) and (Input Box). Array's, Collection and Types. Programming with Objects/ Controls. Error handling: Types of Error, Exception, Method's & Functions.
Unit - 3	Graphics & Multimedia: Function, Command's, Method's to Implement Graphical & Multimedia Feature's in the Application. Activex Components: Basic Activex Components, Advance Active Components. Text Formatting Properties. Timer Control, Mouse Pointer & Cursors, Control array, Multiple Document Interface. Implementation of VB Functions.
Unit - 4	Database Programming with VB: Connectivity, Connectivity Tools: Data control ADODC, ADODB. Data Environment, Connection Type. Data Bound Control's: Single Value. Multi-Value. Multi-Column. Report: Introduction to Report, Types of Reports. Report in VB. Grouping, Use of SQL, Executing SQL.
Unit - 5	Text Files: Types of Files in VB, Modes of Files. Different File Operation's Scripting Control & File System Object Moving. Updating. Deleting From File. Introduction to VB Script. ASP and Window Programming.

Required Readings:

1. Mastering Visual Basic By Evangets Petro.....BPB
2. Basic of Visual Basic- Kamal Prakashan
3. Beginning Visual Basic.....

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Session / सत्र	2014-15
Class / कक्षा	PGDCA
Semester / सेमेस्टर	Second
Subject / विषय	RDBMS Using ORACLE
Title of the paper / प्रश्न पत्र का शीर्षक	
Compulsory / अनिवार्य Optional / वैकल्पिक	Compulsory / अनिवार्य
Maximum Marks :	अधिकतम अंक :

Particular / विवरण

Unit -1	DBMS: Definition, Schemas, Instance, Catalog, Meta-Data, Three-levels, Different Users, Architecture. Model: Different Features, Advantages & Disadvantages of Network, Hierarchical, Relational & Object-Oriented Models.
Unit- 2	ER Model: Types of Attributes, Entity & Entity Sets, Symbols, Keys, Mapping. Degree of Relationship, generalizations, Specialization, Aggregation, Conversion of ER Schema into Relational Schema.
Unit - 3	Normalization: Multivalued Attributes & 4NF, Function Dependence & 3NF, Transitive dependence & 4NF, BCNF (3 1/2 NF), MVD & 5NF, JD & 5NF.
Unit - 4	SQL (Using ORACLE): Query Languages: SQL, QUEL & QBE with Practical Examples, DDL, DML & DCL Commands, Types of Oracle Join, Types of Functions.
Unit - 5	SQL * PLUS : Different Types of SELECT, Data Constraints: Primary Key, Foreign Key, NULL, UNIQUE, CHECK, Subqueries, View, Index, Sequence, Granting & Revoking Permissions.

Required Readings:

1. Database Management System by Hoffer
2. ORACLE 8... By Ivon Bayross
3. The ORACLE Complete By: Oracle Press
4. Concepts of Database Management System By Kamal Prakashan
5. Database Management System By CJ DATE

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Session / सत्र	2014-15
Class / कक्षा	PGDCA
Semester / सेमेस्टर	Second
Subject / विषय	Computer Networking
Title of the paper / प्रश्न पत्र का शीर्षक	
Compulsory / अनिवार्य Optional / वैकल्पिक	Compulsory / अनिवार्य
Maximum Marks :	अधिकतम अंक :

Particular / विवरण

Unit -1	Communications & its types: Analog & Digital, Synchronous & Asynchronous, Connection Oriented & Connectionless. Serial & Parallel. Wire & Wireless. OSI Model: Features, Functions Protocols of Different Layers. Transmission Media: Bounded & Unbounded with Their Types.
Unit- 2	LAN, MAN & WAN: Features. Advantages & Disadvantages. Network Topologies: Features. Advantages & Disadvantages of BUS, RING, STAR, TREE, MESH. Network Architecture: Ethernet, Token Bus, Token Ring, FDDI, ARC Net.
Unit - 3	Network Layer Functions: IP Addressing & Sub netting, Switching Packet Formation (Datagram & Virtual Circuit) Routing Algorithm: Static & Dynamic like: Shortest Path, Flooding, Flow Based, DVM, LSR.
Unit - 4	Data Link & Transport Layer: Error Detection & Correction : LRC, VRC, CRC, Checksum, Hamming Code. Character Oriented & Bit- Oriented Protocol (HDLC) Line Discipline, Flow control Similarities & Differences between Data Link & Transport Layers.
Unit - 5	TCP/IP Protocol Suite: TCP, IP, ARP, RARP, BGP, UDP, ICMP, DNS, RIP, OSPF, FTP, SMTP, NFS, TELNET, DHCP, WINS. IPX/SPX Protocol Suite. Apple Talk Protocol Suite.

Required Readings:

1. Computer Networks Bygs
2. Computer Networks By Tenunbom
3. Data Network & Computer Control By Meller
4. Computer Networks By Kamal Prakashan

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Session / सत्र	2014-15
Class / कक्षा	PGDCA
Semester / सेमेस्टर	Second
Subject / विषय	Internet & E-Commerce
Title of the paper / प्रश्न पत्र का शीर्षक	
Compulsory / अनिवार्य Optional / वैकल्पिक	Compulsory / अनिवार्य
Maximum Marks :	अधिकतम अंक :

Particular / विवरण

Unit -1	Internet, Internet & Extranet: Features, Advantages & Disadvantages. Connectivity Devices: MODEM, Repeater, Hub, Bridge, Router, Switch, Gateway Their Working & Types.
Unit- 2	History & Architecture of Internet, Types of Internet A/cs. Internet Addressing: IP Address, Domain Name, E-Mail & URL. ISP/IAP: Types, Criteria for Selection, Facts gather from ISP, Online Services.
Unit - 3	www.W3C. HTTP, FTP, SMTP, POP3. Web Sites, Internet Relay Chart. E-Mail: Working, Composing, Attachement, Smileys, Netiquette, Microsoft Outlook: Menus & Features.
Unit - 4	Web Browser: Internet Explorer, Netscape Navigator, Web Server, Proxy Server, Internet Viruses, Internet Security, Firewall, Encryption, Decryption, Digital Signature, Digital Certificate, Search Engines.
Unit - 5	E-commerce & M-Commerce: Types of E-Commerce, Functions, Technologies: EDI, PDE, Bar Code etc, E-business, Difference between E-Commerce & E-Business. Advantages & Disadvantages of E-commerce. M-Commerce.

Required Readings:

1. Internet for Dommies- Pustak Mahal. New Delhi
2. Internet & Web Technology- Kamal Prakashan
3. The Internet Complete Reference- TATa McGRAW HILL
4. How The Internet Works By Preston Gralla