

# **RANI DURGAVATI UNIVERSITY, JABALPUR**

BA/B.Sc.-Semester –I (Computer Application)

CA–100: Fundamentals of Computer and Programming techniques

Max.Marks –85

## **UNIT –I**

What is computer, evolution of computer, their classification and Generations, uses of computer in modern society. Number System : Binary Number System, Decimal Number System, Octal Number System, Hexadecimal Number System, Conversion –Binary to Decimal, Octal and Hexadecimal number and vice versa Binary Arithmetic: Addition, subtraction & multiplication. ASCII and BCD Code, fixed point and floating point representation of numbers. Input Devices: Keyboard, Mouse, Light Pen, Touch Screen, Joystick, Scanner, OCR, OMR , MICR, Bar Code Reader Output Devices: Monitor, Printers, Plotters. Processing Unit: Control Unit, Arithmetic Logic Unit, Registers, Instruction cycle. Primary Memory :RAM & types of RAM,ROM and types of ROM, Cache Memory. Secondary Memory: Magnetic Tape, Floppy Disk ,Hard Disk , CD, DVD, Pen Drive.

## **UNIT –II**

Introduction to Software -System Software Operating System, Evolution of operating system, machine Language , Translators, compiler Interpreter , Utilities programme, types of operating system. Application Software: What is Application software, types of application software. Introduction to MSDOS, Booting Process: ROM BIOS, self test io.sys, msdos.sys, autoexe.bat, command.com ,Types of files(data, program),directories(root, single, multi, current) wildcard characters ,Dos Commands –Internal –Dir, MD, CD, RD, COPY, DEL, REN, VOL, DATE, TIME CLS, PATH, TYPE. External-CHKDSK, XCOPY, PRINT, DISKCOPY, DISCOMP, DOSKEY, TREE, MOVE, LABEL, APPEND, FORMAT, SORT, FDISK, BACKUP, EDIT, MODE, ATTRIB.

## **UNIT –III**

Introduction to Windows XP, Desktop, Icons, Window: What is window? Types of Window, Parts of Window, Menu Bar, Tool Bar, Status Bar, scroll Bars and Buttons, Work Area. Working with Windows: Open Application, Creating Folder, Creating and Saving File, Opening File and Folder, Renaming File and Folder, Deleting File and Folder, Copying File and Folder, Moving File and Folder.

## **UNIT –IV**

MS Word Basics: Introduction to MS Office; Introduction to MS-Word; Features & area of use. Menus & Commands; Toolbars & Buttons; Creating a New Document; Different Page Views and layouts; Applying various Text Enhancements; Inserting –Page Numbers, Pictures, Files, Auto text, Symbols etc.; Working with Columns, Tabs & Indents; Creation & Working with Tables including conversion to and from text; Mail Merge, Envelops & Mailing Labels.MS Excel: Introduction and area of use; Working with MS Excel.; concepts of Workbook & Worksheets; Various Data Types; Using different features with Data, Cell and Texts; Inserting, Use of Formulas, Calculations & Functions; Cell Formatting including Borders & Shading; Working with Different Chart Types; Printing of Workbook & Worksheets with various options. MS PowerPoint: Introduction & area of use; Working with MS PowerPoint; Creating a New Presentation; Working with Presentation; Adding Graphics, Sounds and Movies to a Slide; Working with PowerPoint Objects; Designing & Presentation of a Slide Show; Printing Presentations, Notes, Handouts with print options.

## **UNIT –V**

Algorithm, Flowchart, Introduction to Development of Program in QBASIC, Constants and Variables, Expressions, Jumping, Branching and Looping, Functions & Subroutines. Subscripted Variable, Single and Double Subscripted variable, Searching, Sorting and Merging of Arrays, String Manipulation. File Management: Types of File in Basic, Handling of Sequential and Random Access File.

TEXT BOOK:

Office XP: BPB publication

Programming in Basic : E. Balaguruswamy, TMHPublication

Reference Books:

Computers Fundamentals by P.K. Sinha, BPB Pub.

Computers Today by Vasandhara , Galgotia Publication

Dos Quick Reference by Rajeev Mathur, Galgotia Pub.

Fundamentals of IT. By Chetan Sharma  
Windows XP BPB pub.  
Basic Programming-Got Fried –Schyam Series  
Office XP: BPB publication

# RANI DURGA VATI UNIVERSITY, JABALPUR

## PRACTICAL

BA/B.Sc. Semester –I (Computer Application)

1. Prepare a program in BASIC for finding the root of a Quadratic Equation in all condition.
2. Prepare a program in Basic for Mark sheet.
3. Prepare a programme in Basic for finding the sum of given matrices of order  $m \times n$
4. Prepare a programme in Basic for finding the multiplication of given matrices of order  $m \times n$
5. Write a program for bubble sorting.
6. Write a program for linear search.
7. Write a program to generate even/odd series from 1 to 100.
8. Write a program to find area of a circle, rectangle, square using case.
9. Write a program to check whether a given number is even or odd.
10. Write a program whether a given number is prime or not.
11. Write a program in BASIC to calculate factorial of a given number.
12. Write a program to enter basic salary of a employee, if the salary is grater then 25000 then TA is 9% of Basic, DA is 8% of Basic, HRA is 10% of Basic & PF is 12% of Basic. Otherwise TA is 7% of Basic, DA is 4% of Basic, HRA is 5% of Basic & PF is 6% of Basic. Calculate it's net salary.
13. The marks obtained by a student in 5 different subjects are input through the keyboard. the student get a division as per the following rules:
  - Percent above or equal to 60 = First Division.
  - Percent between 50 and 59 = Second Division
  - Percent between 40 and 49 = Third Division
  - Percent less than 40 = Fail
14. Write a program to calculate the division obtained by the student.
15. Write a program using structure to enter details of a student.
16. Write a program using structure to enter details of 5 employees.
17. Write a program to generate a series  
 $1 + 1/1! + 2/2! + 3/3! +$   
-----  
 $+ n/n!$
18. Write a program to create a pyramid structure  
\*  
\*\*  
\*\*\*  
\*\*\*\*
19. Write a program to create a pyramid structure  
1  
12  
123  
1234
20. Write a program to create a pyramid structure  
1  
22  
333  
4444
21. Write a program to reverse a string.
22. Write a program to find whether a given string is PALINDROME or not.
23. Write a program to input 10 numbers add it and find it's average.
24. write a program to generate series  
 $1 + 1/2! + 1/3! +$   
-----  
 $+ 1/n!$
- 25 . DOS internal and External Commands
26. MS-WORD Applications
27. Excel-Worksheet creation and Chart preparation.

# RANI DURGAVATI UNIVERSITY, JABALPUR

## BA/B.Sc.-Semester –II (Computer Application)

### CA–200: Internet Technology & DBMS

Max. Marks-85

#### UNIT I

Internet Foundation : hardware and software requirement for internet, introduction and history of internet, Advantages and disadvantages of internet, internet protocols: TCP/IP, FTP, HTTP. Uploading and downloading of files, What is search engine? . Use of WWW ,web Browser : Netscape navigator, internet explorer, web browser interface to E-mail, how web browser work, features of web browser, internet phone, internet chatting, Web site development : describing the design, conducting the business on web, E-commerce, designing graphics for the web, planning the home page, creating a home page plan, web manager,

#### UNIT II

HTML : the evolution of HTML, URL, Hypertext, basic HTML tags, HTML editors, document style and organization, element reference. <HEAD> element, document title, external link, document meta information, location of current document, searchable document, line break, inline image, character container, hypertext links, hypertext anchor, , logical style, block containers, heading ( 1 through 6) ., list , forms , tables, frames,

#### UNIT III

Operational data purpose of data base system, views of data, data models: relational network and hierarchical, data dictionary types of data base language: DDL, DML, DCL, advantage & disadvantage of DBMS. 3 level architecture of DBMS, External , conceptual & an internal level , entity, attribute ,entity set, E-R diagram , mapping constraints ,strong &weak entities, generalization, specialization.

#### UNIT IV

Set theory Concepts and Fundamentals :Relation, Domains, Concept of Key, codd's rules SQL introduction functional dependencies, good & bad decomposition universal relation, normalization :1,2,3and BCNF normal form

#### UNIT V

Multi valued dependencies, join dependencies, fourth & fifth normal form indexing and hashing, B+ tree index, static hash function.

#### Text books

Web Technology-U.K. Singh-Image Publication

Advanced HTML-Jose A. Ramalha

“Data Base Management System” by Leon and Leon, Vikas Publication.

#### Reference Book-

Internet and E-commerce, Kalyani Pub.

“Data Base System Concept” by Henry F. Korth.

“An Introduction to Data Base System” by Bipin C.Desai.

“Data Base Management System by –James Martin

“An Introduction to Data Base System” by C.J. Date.

# **RANI DURGAVATI UNIVERSITY, JABALPUR**

## **PRACTICAL**

BA/B.Sc. Semester –II (Computer Application)

List of Practical:

1. Creating various types of documents in PageMaker Like :-

(i) Invitation cards

(ii) Brochure

(iii) Visiting card

(iv) Resume

(v) Posters

(vi) Reports etc.

2. Creating an E-mail account.

3. Sending and Receiving E-mail.

4. Creating home pages.

5. Designing various types of web pages Like :-

(i) Web page including tables

(ii) Web page including hypertext links

(iii) Web page including frames

(iv) Web page including various types of headings.

(v) Web page including image on it.

# **RANI DURGAVATI UNIVERSITY, JABALPUR**

## **BA/B.Sc. Computer Application III-Semester**

### **Paper- 301: Operating System and Overview of Oracle (RDBMS)**

**Max. Marks: 85**

#### **Unit-I**

Why do we need operating system, functions and type of operating System, Batch operating system, Multiprogramming operating system, Timesharing Operating system, system components, Operating system services, system calls, and system programs. Overview of Process concept , Process State , Process control Structure , scheduling, types of scheduling basic concept of scheduling, CPU scheduling criteria, scheduling algorithms (fcfs, rrs, spns, srts, ps, hrrn, mqs, mfqs), process scheduling, real time scheduling, aggregation of algorithms.

#### **UNIT-II**

Concept of concurrency, critical section problem, solution of mutual exclusion problem, semaphores classical problem of synchronization, monitors. Atomic transactions deadlock characterization, method of handling deadlock, deadlock prevention, avoidance, detection, recovery and combined approach.

#### **UNIT-III**

Memory hierarchy, main memory, main address map, auxiliary memory, address space and memory spaces, virtual memory, address mapping using pages associative memory page table, demand paging, performance of demand paging, page replacement algorithms.

#### **UNIT-IV**

Concept of Data models characteristics are relational DBMS model RDBMS components, cline of server computing and oracle, overview of oracle architecture- oracle files, system and user process, oracle memory.

Invoking SQL\* Plus, Data manipulation in DBMS, Oracle data types, two dimension matrix creation.

#### **UNIT-V**

Creation, insertion, updation, deletion of tables, modification of table structure, dropping table, data constraints, column and row level constraints, Null, unique key, default key, foreign key check integrated constraints. Select commands logical operators, range searching, pattern matching, oracle function, grouping data from table in SQL, manipulation of data in SQL, joining multiple tables.

#### **Text Books-**

##### **For I,II,III UNITS**

1. Fundamental by Computer by V. Rajaraman.
2. Operating systems concept and design by Mcmilon.
3. Operating system by Galvin.

##### **For IV and V UNITS**

1. Oracle by Ivan Bayross-BPB publications.
2. The Oracle by Liebschuty-BPP publication.
3. Oracle a Beginners guide by Michel TMH publication

**RANI DURGA VATI UNIVERSITY, JABALPUR**  
**PRACTICAL**

BA/B.Sc. Semester –III (Computer Application)

**Paper- 301: Operating System and Overview of Oracle (RDBMS)**

**List of Practical's-**

1. Single table retrieval problem from 1 to 22 (Page No.74-75 from Oracle by Ivan)
  2. Set functions and concatenation problem from 23 to 25 (Page No.74-75 from Oracle by Ivan)
  3. Problems on having and Group by.
  4. Problems on join and correlation.
  5. Problems on nested queries.
  6. Problem using date function.
  7. Problem of Table pupation.
  8. Problems on PL/SQL
- 
1. Find some of series
  2. Find the GRT/ smallest out of three numbers.
  3. Find the GRT/smalls out of N numbers.
  4. Inversing a given numbers.
  5. Computer cost of product with respect to assume conditions.
  6. Program for cursor formation.
  7. Program for procedure formation.
  8. Program for function and trigger formation.

**Max. Marks:**

**Unit-I**

Computer hardware firmware and software (Introduction to computer programming, the OS), Bases of computer Architecture. Boolean algebra, principles of Boolean algebra, truth table, and rules for its formation, Boolean operation: NOT operation, logical addition, logical multiplication, rules of Boolean algebra, Demorgans Theorems. Data types, number system, octal and hexadecimal numbers Decimal representation, Alphanumeric Representation, Complements in Number system.

**Unit-II**

I/O interface, properties of simple I/O devices and their controller, isolated verses memory mapped I/O, modes of data transfer, Synchronous, Asynchronous data transfer, handshaking, asynchronous serial transfer, I/O process. Auxiliary memory, magnetic Drum Disk and tapes, semi conductor memory, RAM and Rom Chips memory address map, memory connection to CPU.

**Unit-III**

VB script basics, embedding VBscripts in HTML VB script to display information, code documentation and formatting, defining and using variables, subtypes and constraints, single and multi dimensional array, VB script procedure, program control statements and structure, strings, numbers, dates and time functions.

**Unit-IV**

ASP: introduction and benefit of ASP introduction to Web servers, PWS, IIS, working with object, using response object- buffering, cache, write, flash, end, redirect. Using the request object- query strength and form collection, retrieving form data working with cookies in ASP.

**Unit-V**

Application and session object Global as a file, client side form validation.. Using database- Introduction to the Activex data object models(ADO), connecting to a database, Displaying records creating dynamic drop down menus and option group, filtering records with SQL where clause, Adding updating and deleting records.

**Text Books- ( for I & II Unit)**

1. Modern Computer Architecture by Fariquzzaman, Galgotia publ.
2. Computer Architecture and Organization by Hayes, McGraw Hill Edi.
3. Computer System Architecture by Moris Mano, PHI Pub.
4. Digital Computer Fundamentals by Bartee.

**Text Books: ( for III, IV & V Unit)**

1. ASP programming bible by Smith, IDG Books
2. Mastering ASP 3.0 by Jones: BPB Publication.
3. Teach yourself ASP in 21 days by James: Tec media.



# **RANI DURGAVATI UNIVERSITY, JABALPUR**

## **PRACTICAL**

BA/B.Sc. Semester –IV (Computer Application)

### **List of Practical's:**

1. Determining the internal data type of a variant.
2. VBScripts coding for testing of functions (IsDate, Is Empty, IsNull, IsNumeric, Is object).
3. VBScript problem with Arithmetic operation, String comparison.
4. VBScript problems using Following:
  - i. Control structure.
  - ii. Select case.
  - iii. For – next.
  - iv. For each –next.
  - v. Do – loop.
  - vi. While – wend.
5. Using mathematical operators and functions.
6. Programs on subroutines and functions.
7. Problems on ASP components.
8. Problems on database connection and SQL Query

B.A./ B.Sc. VI-Semester  
Subject : Computer Application

Max Marks : 85

Theory : 75 marks  
Major Project using Oracle ASP.NET : 10 marks

CCE : 15 marks

Unit-I: Introduction to .NET, .NET Framework features & architecture, concept of web programming, web browser and web server, Basic HTML Tags, how to create HTML pages and forms

Unit-II: Web Development: Role of .NET in web development, .NET frame work and platform base classes, XML as .NET meta language, Overview of CLR, .NET class frame, study of .NET component.

Unit-III: Introduction to ASP.NET Frame work, ASP.NET controls and its overview, control events and view state, understanding ASP.NET pages, source code for .NET class, Dynamic compilation, control Trees using asix behind pages, how code-behind work handling page, Events Debugging and Tracing ASP.NET pages

Unit-IV: Standard control, How to use standard control (Text box control, Label control, List control, Checkbox control, Radio Button Control) using the - Radio Button Control, Image Button controls, Image control, panel control and Hyperlink control, Overview of validation control and java script using custom Validator control, custom Validation control, Range Validator control Overview of Rich controls

Unit-V: Overview of ADO & ADO.NET, Establishing and Accessing connection, connection String, the DbConnector classes, communication with data source executing command using Data Readers, Concept of Typed Data Set and its programming, Using a dataset manually using a data adapters, ADO.NET with ASP, data bound controls, data source control, ASP.NET parameters with Data source control, data binding, data binding expression.

Text and Reference Books:

1. David Chapter: Understanding .NET: A tutorial and analysis.
2. Watkins, Abrams - Programming in the .NET environment.
3. Introduction to .NET framework.



**B.A./ B.Sc. V-Semester**  
**Subject : Computer Application**  
**Operating System & RDBMS**  
**(Session 2013-14 & onwards)**

**Max Marks : 85**

**Unit-I**

What is an operating system. Operating system as an extended machine and Resource Manager. Operating system concepts. Basic memory management techniques – contiguous memory allocation and Non-contiguous Real Memory management.

**Unit-II**

Principles of Deadlocks and their preventions; File System : Files – file naming, file structure file types, file access, file attributes, file operation. Directories, file system implementation – implementing files and directories.

**Unit-III**

Granting Permission using GRANT Statement, Revoking the Permission, Using PL/SQL: Performance Improvement, PL/SQL. Data types, what PL/SQL Command. Do for Programmers, The PL/SQL Execution Environment. The PL/SQL SYNTAX: The Character set understanding the PL/SQL, Block Structure.

**Unit-IV**

STORED PROCEDURES: What are Procedures, how Oracle relates a Procedure, how Oracle Executes Procedures, Advantages of Procedures, Syntax for Creating Stored Procedure, An Application using a Procedure, Deleting a Stored Procedure.

**Unit-V**

STORED FUNCTIONS: What are Functions, where Function resides, How Oracle Generates a Function, How Oracle executes a Function, Advantages of Functions, Syntax for creating a stored Function, A n application using a Function, Deleting a Stored Function, & Data Base Trigger.

**Text Books :**

1. Andrew S. Tanenbaum -- Operating System Design and Implementation.
2. S. Galvin – Operating System
3. Ivan Bayross, "SQL, PL/SQL".
4. Liebschury, "The Oracle Book".



B.A./ B.Sc. VI-Semester  
Subject : Computer Application

Max Marks : 85

Theory : 75 marks  
Major Project using Oracle ASP.NET : 10 marks

CCE : 15 marks

Unit-I: Introduction to .NET, .NET Framework, features & architecture, concept of web programming, web browser and web server, Basic HTML, Tags, how to create HTML pages and forms

Unit-II: Web Development: Role of .NET in web development, .NET frame work and platform base classes, XML as .NET meta language, Overview of CLR, .NET class frame, study of .NET component.

Unit-III: Introduction to ASP.NET Framework, ASP.NET controls and its overview, control events and view state, understanding ASP.NET pages, source code for .NET class, Dynamic compilation, control Trees using code behind pages, how code-behind work handling page, Events/Debugging and Tracing ASP.NET pages

Unit-IV: Standard control, How to use standard control (Text box control, Label control, Literal control, Checkbox control, Radio Button Control) using the - Radio Button Control, Image Button controls, Image control, panel control and Hyperlink control, Overview of validation control and java script using custom Validator control, custom Validation control, Range Validator control, Overview of Rich control

Unit-V: Overview of ADO & ADO.NET, Establishing and Accessing connection, connection String, the DbConnector classes, communication with data source executing command using Data Readers, Concept of Typed Data Set and its programming, Filling a dataset manually using a data adapters, ADO.NET with ASP, data bound controls, data source control, ASP.NET parameters with Data source controls, data binding, data binding expression.

Text and Reference Books:

1. David Chapter - Understanding .NET: A tutorial and analysis.
2. Weikins, Abrams - Programming in the .NET environment.
3. Introduction to .NET framework.

