

SYLLABUS MODIFICATION :

SNO	YEAR	Paper Code	MODIFICATION
1	2015-2016	108-4-B	❖ Chosen E-commerce and Multimedia concepts for I Semester Bcom(Gen) of Fundamentals of Information Technology
2	2016-2017	3308-4	❖ New paper ie., “PROGRAMMING IN C” selected for II Bcom(Gen) in III Semester
3	2016-2017	4408-4	❖ New paper ie., “PROGRAMMING IN C++”selected for II Bcom(Gen) in VI Semester
4	2017-2018	608CEL01	❖ Cluster paper ie., “Operating Systems” has been selected to III Bcom(CA) in VI Semester.
5	2017-2018	616CLA1	❖ Cluster paper ie., “Cloud Computing” has been selected to III Bsc(Mscs) in VI Semester.
6	2018-2019	Advance Java: 30804A Software Engineering: 30801A DBMS: 30802A	❖ Modified the syllabus of II MCA papers of Software Engineering, Advanced Java and DBMS papers
		DM:5523 IS: 5522 Cloud Computing: 6623	❖ Implemented new Technologies such as Data Mining, Information Security, Cloud Computing In III Bsc(Honors)Computers along with the existing UGC Syllabus as a Elective Papers
7	2019-2020		NO MODIFIATIONS

D.R.W COLLEGE (Autonomous) :: GUDUR
I BCom (General)-SEMESTER-I
FUNDAMENTALS OF INFORMATION TECHNOLOGY
Paper-I
Modified Syllabus with effect from 2015 to 2016

Lecturers/week: 3 periods

Exam: 3 Hrs

Marks: 70+30

UNIT-I:

Introduction to computers: Definition, characteristics and limitations of computers-Elements of computers-Hardware-CPU-Primary and Secondary memory.

Input devices: key board, mouse, joystick, light pen. Output devices: monitor, printer.

IT enabled services-BPO, KPO, Call centers.

UNIT-II:

Modern communications: communications-FAX, voice mail, and information services-Email-Creation of email id-Group communication-Tele conferencing-Video conferencing-File exchange-Bandwidth-Modem

UNIT-III:

Operating system and windows: operating systems: Meaning, definition, functions and types of operating systems-Booting process-Disk operating system: internal and external commands-Wild card characters-computer virus, Cryptology. Windows operating system-Desktop, start menu, control panel, windows accessories.

UNIT-IV:

Enabling technologies of the World Wide Web: Network Topologies-Network types LAN, MAN, WAN and their architecture-Dial-up access.

UNIT-V:

Multimedia:

Meaning, Purpose, Usage and Applications, Images, Graphics, Sounds, Music, Video, Multimedia On Web

Internet

Introduction, Services Available On Internet, World Wide Web, Internet Service Provider

Ecommerce

Introduction, Ecommerce Meaning, Advantages and Limitations, Applications

References:

1. Introduction technology : Dennis P.Curtin,Mc Graw Hill International
2. Fundamentals of computers : P. Mohan, Himalaya Publishing House
3. Fundamentals of computers : Atul Kahate,Tata Mc Graw Hill

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II B.Com(General) Under CBCS With Effect From Academic Year 2016-2017

III SEMESTER

PAPER III : PROGRAMMING IN C

UNIT I:

Introduction to C:

Structure of C Program – Compiling and Executing C Programs – Using Comments
Keywords – Identifiers – Basic Data Types in C – Variables – Constants – Operators in C
(Arithmetic, Relational, Logical, Increment and Decrement)
I/O Statements in C – formatted input and output functions – use of scanf() and printf()
functions

UNIT II:

Decision Control and Looping Statements: Introduction to Decision Control Statements –
Conditional Branching Statements – Iterative Statements — Break and Continue Statement – Go
to Statement

UNIT III:

Functions: Introduction – using functions – Function declaration/ prototype – Function
definition – function call – return statement – Passing parameters – Scope of variables

UNIT IV

Arrays: Introduction – Declaration of Arrays- initialization– Accessing elements of the Array –
Storing Values in Array – one dimensional array– Two dimensional Arrays
String-String and Character functions.

UNIT V

Structure, Union Data Types: Introduction – Declaring Structures – Union – Declaring Unions
Enumerated Data Types **Pointers:**– Introduction to Pointers – declaring Pointer Variables –
Pointer and Arrays

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
II B.Com (General) Under CBCS with Effect from Academic Year 2016-2017
II YEAR IV SEMESTER

PAPER:IV : PROGRAMMING IN C++

UNIT-I:

Introduction to C++-Applications of C++-A Sample C++ Program-Structure of C++ program –
Compiling and linking-Tokens-Keywords-Identifiers and Constants

UNIT-II:

Comparison Between C And C++ - ,Data Types: Integer Data Types,Char,Unsigned
Char,Short,Unsigned ShortInt ,Unsigned Int ,Long, Unsigned Long, Floating Data Types
Input Statement Or Input Function In C++,Operators: Arithmetic Operators-Logical Operators-
Relational Operators- Unary Operators-Increment Operators (++), Decrement Operator (--),
Prefix Notation, Postfix Notation

UNIT-III

Decision Making And Branching: If...Else Statement, Switch Statement
Decision Making and Looping: while statement, do..While statement, for..Loop statement
Jumps In Loop: Break, Continue Statements

UNIT-IV

Functions –function with default arguments, inline functions, function overloading, reference
variables

Arrays - Single and multidimensional arrays.

Unit-V

Object and Classes: Defining a class, defining member functions, array of objects, Constructor
and destructors, operator overloading,Inheritance

Reference Books

1. Object Oriented Programming with C++ - M.T. Somashekara, D.S.Guru, H.S. Nagendraswamy, K.S. Manjunatha, PHI 2nd Edition
2. Object Oriented Programming with C++ - E. Balagurusamy, 4th Edition, Tata Mc Graw Hill Publication
3. Object Oriented Programming in C++ - Robert Lafore, 4th Edition, Pearson Education
4. Object-Oriented Programming with ANSI and Turbo C++.

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D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Com.(Computer Applications)Syllabus Under CBCS
III YEAR VI SEMESTER
Paper-VII: Elective-I(A)

OPERATING SYSTEMS

UNIT - I

Operating System Introduction: Operating Systems Objectives and functions, Computer System Architecture, OS Structure, Evolution of Operating Systems (Simple Batch, Multi programmed, Distributed Systems, Real-Time Systems), Operating System services.

UNIT - II

Process and CPU Scheduling - Process concepts - The Process, Process State, Process Control Block, Threads, Process Scheduling - Schedulers, Preemptive and non-preemptive Scheduling algorithms (FCFS, SJF, RR)

UNIT - III

File System Interface - The Concept of a File, Access methods, Directory Structure, File Sharing, Protection, File System Structure
Mass Storage Structure - Overview of Mass Storage Structure, Disk Structure, Disk Attachment

UNIT - IV

Deadlocks - System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery from Deadlock.

UNIT - V

Memory Management and Virtual Memory - Logical & physical Address Space, Swapping, Contiguous Allocation, Paging, Structure of Page Table. Segmentation, Segmentation with paging

TEXT BOOK

1. Operating System Principles, Abraham Silberchatz, Peter B. Galvin, Greg Gagne 8th Edition, Wiley Student Edition.
2. Operating systems - Internals and Design Principles, W. Stallings, 6th Edition, Pearson.

REFERENCES BOOKS:

1. Principles of Operating Systems by Naresh Chauhan, OXFORD University Press
2. Modern Operating Systems, Andrew S Tanenbaum 3rd Edition PHI.
3. Operating Systems A concept - based Approach, 2nd Edition, D. M. Dhamdhare, TMH.
4. Principles of Operating Systems, B. L. Stuart, Cengage learning, India Edition.
5. Operating Systems, A. S. Godbole, 2nd Edition, TMH

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Sc. Computer Science Syllabus Under CBCS w.e.f.2017-2018
III YEAR VI SEMESTER
Cluster C :paper-VIII :Elective II-2
CLOUD COMPUTING

Unit I

Cloud Computing Overview – Origins of Cloud computing – Cloud components - Essential characteristics – On-demand self-service , Broad network access , Location independent resource pooling , Rapid elasticity , Measured service

Unit II

Cloud scenarios – Benefits: scalability , simplicity , vendors ,security. Limitations – Sensitive information - Application development – Security concerns - privacy concern with a third party - security level of third party - security benefits Regularity issues: Government policies

Unit III

Cloud architecture: Cloud delivery model – SPI framework , SPI evolution , SPI vs. traditional IT Model

Software as a Service (SaaS): SaaS service providers – Google App Engine, Salesforce.com and google platform – Benefits – Operational benefits - Economic benefits – Evaluating SaaS

Platform as a Service (PaaS): PaaS service providers – Right Scale – Salesforce.com – Rackspace – Force.com – Services and Benefits

Unit IV

Infrastructure as a Service (IaaS): IaaS service providers – Amazon EC2 , GoGrid – Microsoft soft implementation and support – Amazon EC service level agreement – Recent developments – Benefits

Cloud deployment model : Public clouds – Private clouds – Community clouds - Hybrid clouds - Advantages of Cloud computing

Unit V

Virtualization: Virtualization and cloud computing - Need of virtualization – cost , administration , fast deployment , reduce infrastructure cost - limitations **Types of hardware virtualization:** Full virtualization - partial virtualization - para virtualization

Desktop virtualization: Software virtualization – Memory virtualization - Storage virtualization –Datavirtualization–Networkvirtualization

Reference Books

1. Cloud computing a practical approach - Anthony T.Velte , Toby J. Velte Robert Elsenpeter TATA McGraw- Hill , New Delhi - 2010
2. Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online - Michael Miller - Que 2008
3. Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier.
4. Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madiseti, University Press
5. Mastering Cloud Computing, Foundations and Application Programming, Raj Kumar Buyya, Christenvecctiola, S Tammarai selvi, TMH

ADVANCED JAVA PROGRAMMING

UNIT – I

JAVA2 ENTERPRISE EDITION OVERVIEW – The ABC of Programming Languages, Taking Programming Languages Up a Notch, The Beginning of Java, Java Bytecode, The Advantages of Java, J2EE and J2SE

J2EE MULTI –TIER ARCHITECTURE – Distributive Systems, The Tier, J2EE Muti – Tier Architecture, Client Tier Implementation, Web Tier Implementation, Enterprise JavaBeans Tier Implementation, Enterprise Information Systems Tier Implementation, Challenges

J2EE BEST PRACTICES - Enterprise Application Strategy, The Enterprise Application, Clients, Sessions Management, Web Tier and JavaServer Pages, Enterprise JavaBeans Tier, The Myth of Using Inheritance, Maintainable Classes, Performance Enhancements, The Power of Interfaces, The Power of Threads, The Power of Notification

J2EE DESIGN PATTERNS AND FRAMEWORKS – The Pattern Concept, Pattern Catalog

UNIT – II

J2EE DATABASE CONCEPTS - Data, Database, Database Schema, The art of Indexing.

JDBC OBJECTS - The Concept of JDBC, JDBC Driver Types, JDBC Packages, A Brief Overview of the JDBC Process, Database Connection, Associating the JDBC/ODBC Bridge with the Database, Statement Objects, ResultSet, Transaction Processing, Metadata

JDBC AND EMBEDDED SQL - Model Programs, Tables, Indexing, Inserting Data into Tables, Selecting Data from a Table, Metadata, Updating Tables, Deleting Data from a Table, Joining Tables, Calculating Data, Grouping and Ordering Data, Subqueries, View.

UNIT – III

JAVA AND XML – Generating an XML Document, Parsing XML, Quick Reference Guide.

JAVA SERVLETS – Java servlets and Common Gateway Interface Programming, A Simple Java Servlet, Anatomy of a Java servlet, Reading Data from a Client, Reading HTTP Request Headers, Sending Data to a Client and Writing the HTTP Response Header, Working with Cookies, Tracking Sessions

JAVA SERVERPAGES – JSP, JSP Tags, Tomcat, Request String, User Sessions, Cookies, Session Objects

UNIT – IV

ENTERPRISE JAVABEANS – Enterprise JavaBeans, Deployment Descriptors, Session Java Bean, Entity Java Bean, Message – Driven Bean, The JAR File

JAVA INTERFACE DEFINITION LANGUAGE AND CORBA – The Concept of Object Request Brokerage, Java IDL and CORBA, The IDL Interface, The Client Side, The Server Side, Running the Code.

JAVA REMOTE METHOD INVOCATION – Remote Method Invocation Concept, Server Side, Client Side

TEXT BOOK

1. The Complete Reference J2EE by Jim Keogh, Tata McGraw – Hill Edition

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SOFTWARE ENGINEERING

UNIT – I

SOFTWARE, SOFTWARE ENGINEERING, AND PROCESS: The nature of Software, The unique nature of WebApps, Software engineering- A layered technology, The essence and principles of software engineering practice, Generic process model (framework), Process patterns, Process assessment and improvement, CMMI, Software myths.

PROCESS MODELS: Prescriptive process models: The waterfall model, Incremental process models, Evolutionary process models. The Unified process, Aspect oriented software development.

UNIT-II

UMBRELLA ACTIVITIES: Risk management, Software quality assurance, Software configuration management.

MEASUREMENT AND METRICS: Size oriented metrics, Function oriented metrics, Metrics for software quality.

SOFTWARE REQUIREMENTS: Introduction to functional and non-functional requirements, Requirements engineering activities, Eliciting requirements, *Requirements modeling*, Requirements validation, Software requirements specification(SRS), Requirements management.

UNIT III

DESIGN CONCEPTS: Software design quality guidelines and attributes, Design concepts, Design model.

SOFTWARE ARCHITECTURE: Architecture and its importance, Architectural Styles, Data design, Architectural design.

DESIGN : Structured view (Traditional view): Architectural mapping using data flow (Call and return architecture), Interface design, Function based component design.

PERFORMING USER INTERFACE DESIGN: Golden rules, User interface analysis and design,

interface analysis, interface design steps.

PATTERN BASED DESIGN: Design patterns, Pattern based software design, Architectural patterns, Component level design patterns, User interface design patterns.

UNIT IV

TESTING STRATEGIES: A strategic approach to software testing – Verification and Validation – Organizing for Software Testing – Testing Strategies – Criteria for completion of testing – unit, integration, validation and system testing – debugging.

TESTING TACTICS: Testing Fundamental – White Box, Black Box, and Control Structure Testing – Object Oriented testing Methods.

PRODUCT METRICS: Metrics for the requirements model, Metrics for the design model, Metrics for source code, Metrics for testing, Metrics for maintenance.

TEST BOOK:

1. Software Engineering, A practitioner's Approach- Roger S. Pressman, 7th edition. McGrawHill International Edition.

REFERENCES:

1. Software Engineering- Sommerville , 8th edition, Pearson education.
2. Software Engineering- K.K. Agarwal & Yogesh Singh, New Age International Publishers
3. Software Engineering, an Engineering approach- James F. Peters, Witold Pedrycz, John Wiley.
4. Systems Analysis and Design- Shely Cashman Rosenblatt, Thomson Publications.
5. Software Engineering principles and practice- Waman S Jawadkar, The McGraw- Hill Companies.

DATABASE MANAGEMENT SYSTEMS

UNIT – I

Overview of Database Systems – Managing Data, A Historical Perspective, File Systems Vs Aa DBMS, Advantages of a DBMS, Describing and Storing Data in a DBMS, Queries in a DBMS, Transaction Management, Structure of a DBMS, People who work with DBMS

Introduction to Database Design – Database Design and ER Diagrams, Entities, Attributes and Entity Sets, Relationships and Relationship Sets, Additional Features of the ER Model, Conceptual Design with the ER Model, Conceptual Design for Large Enterprises, The Unified Modeling Language, Case Study: The Internet Shop

UNIT – II

The Relational Model – Introduction, Integrity Constraints over Relations, Enforcing Integrity Constraints, Querying Relational Data, Logical Database Design: ER to Relational, Introduction to Views, Destroying/ Altering Tables and Views, Case Study: The Internet Store

Relational Algebra and Calculus – Preliminaries, Relational Algebra, Relational Calculus, Expressive Power of Algebra and Calculus

UNIT – III

SOL: Queries, Constraints, Triggers – Overview, The Form of a Basic SQL Query, Union, Intersect and Except, Nested Queries, Aggregate Operators, Null Values, Complex Integrity Constraints in SQL, Triggers and Active Database, Designing Active Databases

UNIT – IV

Database Application Development – Accessing Databases from Applications, An Introduction to JDBC, JDBC Classes and Interfaces, SQLJ, Stored Procedures, Case Study

Internet Applications – Introduction, Internet Concepts, HTML Documents, XML Documents, The Three – Tier Application Architecture, The Presentation Layer, The Middle Tier

TEXT BOOK:

Database Management Systems by Raghu Ramakrishnan, Johannes Gehrke, 3rd Edition

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DEPARTMENT OF COMPUTER SCIENCE
B.Sc.(Honours) Computer Science Syllabus Under CBCS w.e.f.2018-2019
V SEMESTER
Discipline Specific Elective Paper (DSE--2): Data Mining

UNIT I: Introduction- Fundamentals of Data Mining- on what kind of data, process of knowledge discovery in databases- Data Mining Functionalities, Classification of Data Mining systems, Data mining task primitives- Major issues in Data Mining.

UNIT II: Data Preprocessing: Needs Preprocessing the Data, data Cleaning, Data Integration and Transformation. Data reduction, Discretization and Concept Hierarchy generation.

UNIT III: Characterization and comparison: Data generalization and Summarization based Characterization- Analytical Characterization - Mining Class Comparisons
Mining Association Rules in Large databases: Association rule Mining - Mining Single-Dimensional Boolean Association Rules from transactional databases

UNIT IV: Classification and Prediction :issues Regarding Classification and Prediction, Classification by Decision Tree Induction, Bayesian classification, Classification, classification by Back propagation,
Prediction: Accuracy and Error measures, Evaluating the accuracy of a Classifier or a Predictor.

UNIT V: Cluster Analysis: Type of data in Cluster analysis, A categorization of Major Clustering Methods, Partitioning Methods: K-means, K- Medoids, Hierarchical Methods: BIRCH, Density-Based Methods: DBSCAN, OPTICS- outlier Analysis.

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DEPARTMENT OF COMPUTER SCIENCE
B.Sc.(Honours) Computer Science Syllabus Under CBCS w.e.f.2018-2019
V SEMESTER

Discipline Specific Elective Paper (DSE--1): INFORMATION SECURITY

UNIT-I

The security problems in computing : The meaning of computer Security, Computer Criminals ,The Security Mechanisms ,Security Services ,Making “Good Encryption Algorithms”:Symmetric Key Cryptography , Asymmetric key Cryptography ,Digital signature and Digital certificates.

UNIT-II

Elementary cryptography: Substitution Ciphers : Poly alphabetic Substitution Cipher ,mono alphabetic substitution cipher. Transposition Ciphers : Ceaser cipher, At bash Cipher ,play fair cipher,(DES) Data Encryption Standards, The AES encryption Algorithm, Public key Encryptions ,Use of Encryption

UNIT-III

Program Security: Secure programs, Non Malicious program errors, Viruses and another malicious code ,the targeted malicious code, control against program Threats, protection in general purpose operating system protected objects and methods of protection memory, File protection mechanisms, User authentication designing trusted OS: Security policies, models of security ,Trusted OS design ,Assurance in Trusted OS

UNIT-IV

Database Security: Security Requirements, Reliability and integrity, Sensitive data , Inference, Multi level Database, proposals for multilevel security.

Security in Networks: Threats in network ,Network security controls, Firewalls ,Intrusion Detection Systems, Secure Emails,

UNIT-V

Administrating Security: Security Planning, Risk Analysis, Organizational Security policies, Physical Security. Legal privacy and Ethical Issues in computer security: protecting programs and data, Information and the law, Rights of employees and employers, software failures, computer crime, Ethical issues in computer security.

Recommended Books:

1. C. P. Pfleeger, S. L. Pfleeger; Security in Computing, Prentice Hall of India, 2006

2. W. Stallings; Network Security Essentials: Applications and Standards, 4/E, 2010

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DEPARTMENT OF COMPUTER SCIENCE
B.Sc. Computer Science Syllabus Under CBCS w.e.f.2017-2018
III YEAR VI SEMESTER- paper-VIII :Elective II(C)
CLOUD COMPUTING

Unit 1: Cloud Computing Overview – Origins of Cloud computing – Cloud components - Essential characteristics – On-demand self-service , Broad network access , Location independent resource pooling , Rapid elasticity , Measured service

Unit II: Cloud scenarios – Benefits: scalability , simplicity , vendors ,security. Limitations – Sensitive information - Application development – Security concerns - privacy concern with a third party - security level of third party - security benefits Regularity issues: Government policies

Unit III: Cloud architecture: Cloud delivery model – SPI framework , SPI evolution , SPI vs. traditional IT Model **Software as a Service (SaaS):** SaaS service providers – Google App Engine, Salesforce.com and google platform – Benefits – Operational benefits - Economic benefits – Evaluating SaaS

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Unit IV: Infrastructure as a Service (IaaS): IaaS service providers – Amazon EC2 , GoGrid – Microsoft soft implementation and support – Amazon EC service level agreement – Recent developments – Benefits

Cloud deployment model : Public clouds – Private clouds – Community clouds - Hybrid clouds - Advantages of Cloud computing

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1. Cloud computing a practical approach - Anthony T.Velte , Toby J. Velte Robert Elsenpeter TATA McGraw- Hill , New Delhi - 2010
2. Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online - Michael Miller - Que 2008
3. Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier.

DEPARTMENT OF COMPUTER SCIENCE
B.Sc.(Computer Science)Syllabus Under CBCS w.e.f. 2016-2017
I YEAR 1 SEMESTER

Paper - I: Computer Fundamentals & Photoshop
MODIFIED MODEL PAPER(2017-18)

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

1. Characteristics of a Computer.
2. Softcopy Devices
3. Floppy Disks
4. Software
5. Cache Memory
6. Flow Charts
7. Internet
8. What is Photoshop?

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

9. Explain about Block diagram of digital computer
10. Explain briefly about Generations of a Computer
11. Explain about Input/output Devices of a Computer

UNIT-II

12. What is Memory Hierarchy? Write about Primary Memory
13. What is a Binary System? Covert a Binary Number $(1101100)_2$ in to a Decimal Form and Octal Form
14. Write about Optical Drives

UNIT-III

15. Explain in detail about System S/W
16. What are the Control Structures used in Algorithms?
17. Explain about middle ware, firm ware

UNIT-IV

18. Explain about Connecting Media
19. Explain about Network topologies
20. Explain about internet services

UNIT-V

21. Explain about tool box
22. Explain working with filters
23. Explain working with layers

DEPARTMENT OF COMPUTERSCIENCE

B.Sc(Computer Science) Syllabus Under CBCS w.e.f.2015-2016 (Modified in April 2016)

I YEAR II SEMESTER

Paper-II: PROGRAMMING IN C

Model Paper(2017-2018)

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **FIVE** Questions

(Marks:6×2=12)

1. Flow chart
2. keyword
3. Goto statement
4. Function defintion
5. Array
6. String
7. pointer
8. Types of files
9. Differentiate Structure and Union
10. String Functions

SECTION-B

Answer any **SIX** questions, at least **One** from each unit

(Marks:6×8=48)

UNIT-I

11. Explain about Generations Of Programming Languages
12. Write briefly different operators available in 'C'
13. Write briefly different data type in 'C'

UNIT-II

14. Write about conditional statements
15. Explain about functions
16. Explain about iterative statements

UNIT-III

17. Write about array types
18. Write a program for addition of two matrix
19. Exaplin about string and character functions

UNIT-IV

20. Explain about array of pointers
21. Explain difference between Structures and unions
22. Explain about Enumarated data types

UNIT-V

23. Explain Reading Data from Files and Writing Data from Files
24. Explain about Error Handling during File Operations.
25. Write functions for selecting a record randomly.

DEPARTMENT OF COMPUTER SCIENCE
B.Sc(Computer Science)Syllabus Under CBCS w.e.f. 2016-2017
II YEAR III SEMESTER
Paper-III : OBJECT ORIENTED PROGRAMMING USING JAVA
Model paper(2018-2019)

Time: 3 Hrs

Max. Marks: 60

SECTION-A

Answer any **SIX** Questions

(Marks:6×2=12)

1. (a)Write difference between break and continue.
- (b)What are the various types of constructors?
- (c)Write types of inheritance.
- (d)Write the advantages of OOP over POP.
- (e)Explain bitwise operators in java.
- (f)Write the methods of String class.
- (i)What is Exception Handling?
- (j)Can we instance an interface? Explain.

SECTION-B

Answer any **SIX** questions, at least **ONE** from each unit

(Marks:6×8=48)

UNIT-1

2. What are the Basic Concepts of OOP?
3. How java differ from c & c++.
4. Explain the java features

UNIT-2

5. Write about looping statements in java.
6. Write about control Structures of java.
7. Explain the operators in java.

UNIT-3

8. What is class? Explain how to define a class in java.
9. Explain Constructors with example.
10. What is vector? Explain Vector with suitable examples.

UNIT-4

11. What is an interface? Explain the process of defining and implementing an interface with examples.
12. What is thread? Explain the ways of creating a thread with Examples.
13. Explain java API Packages

UNIT-5

14. What is an error? Explain different types of errors.
15. What is an Exception? List any 10 predefined Exceptions.
16. Explain the life cycle of Applet.

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DEPARTMENT OF COMPUTER SCIENCE
B.Sc. Computer Science Syllabus Under CBCS w.e.f.2017-2018
II YEAR IV SEMESTER
DATA STRUCTURES
MODEL PAPER

Time: 3 Hrs

Max. Marks: 70

SECTION-A

Answer any **FIVE** Questions
(Marks:5×2=10)

1. (a)What is Data Structure?
- (b)What are Non Linear data structures?
- (c)Write the difference between single linked list and double linked list.
- (d)What is stack?
- (e)What is linked list?
- (f)Define graph.
- (g) What is Expression Evaluation?
- (h)What is complete binary tree?
- (i)What is weighted graph?
- (j)What is sorting?

SECTION-B

Answer any **SIX** questions, at least **ONE** from each unit
(Marks:6×10=60)

UNIT-1

2. Write overview of Data Structure.
3. Explain Data Structure operations.
4. Write types of linked list.

UNIT-2

5. Define Stack? Explain its operations and its applications
6. Write about Queue and its types with example.
7. Define Circular queue? Explain its operations with algorithms

UNIT-3

8. Define tree? Explain its terminology.
9. Explain various types of binary trees.
10. Explain tree traversal techniques in detail with examples

UNIT-4

11. Define graph? How the graphs are represented in memory
12. Write BFS with Example
13. Describe the minimum spanning tree with example.

UNIT-5

14. Discuss about Bubble sort? Explain
15. Discuss about Quick Sort? Explain
16. Explain Merge sort with example

DEPARTMENT OF COMPUTER SCIENCE

B.Sc(Computer Science)

III YEAR V SEMESTER

Paper-V: Data Base Management System

Model Paper(2017-2018)

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **FIVE** Questions

(Marks:5×2=10)

26. Differentiate data & information.
27. Explain DBMS.
28. Write about attribute classification.
29. Explain degree of relationship.
30. What is key? Explain about primary key, super key.
31. What are traditional set operators?
32. What is SQL?
33. What are DML Commands?

SECTION-B

Answer any **SIX** questions, at least **One** from each unit

(Marks:6×10=60)

UNIT-I

34. Explain about Classification of Database Management System?
35. Explain Evolution of database management system?
36. Explain ANSI/SPARK Data Models

UNIT-II

37. Explain about Disadvantages of file processing system?
38. Explain Codd Rules?
39. Explain relational database model?

UNIT-III

40. Explain E-R Model?
41. Explain the Following a) Attribute classification b) Relationship degree
42. Write about Normal forms?

UNIT-IV

43. What are the various types of SQL statements?
44. How to create a View in SQL?
45. Write about Joins in SQL

UNIT-V

46. Write about PL/SQL Structure in detail
47. What is cursor? How many types of cursor are there? explain
48. Explain about triggers with example

DEPARTMENT OF COMPUTER SCIENCE

B.Sc(Computer Science)

Fifth Semester

III YEAR V SEMESTER

Paper-VI: Software Engineering

Model Paper(2017-2018)

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **FIVE** Questions

(Marks:5×2=10)

1. Define software engineering.
2. What is Software Myths?
3. What is waterfall model?
4. What is process model?
5. What is s/w quality assurance?
6. What is design?
7. What is black box testing?
8. What is test case?

SECTION-B

Answer any **SIX** questions, at least **One** from each unit

(Marks:6×10=60)

UNIT-I

9. Explain evaluation of software engineering and its characteristics
10. Explain the components of software engineering
11. Explain about risk management

UNIT-II

12. What is spiral model for developing software?
13. Explain about incremental and prototype process models?
14. Explain about RAD model

UNIT-III

15. Explain data modeling concepts.
16. Explain requirement engineering.
17. How to create data flow model in s/w engineering?

UNIT-IV

18. Explain about design process and quality?
19. Explain software quality assurance in detail
20. Explain architecture styles and patterns in design engineering?

UNIT-V

21. Explain about s/w quality and testing.
22. Explain about project life cycle.
23. Write in detail about user Satisfaction testing

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Sc. Computer Science Syllabus Under CBCS w.e.f.2017-2018
VI SEMESTER
Paper-VII : Elective I(C)
WEB TECHNOLOGIES
Model paper

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **Five** Questions
(Marks:5×2=10)

1. What is internet?
2. Explain about web server
3. What is protocol?
4. Explain message composition in internet.
5. What is HTML?
6. What is a Basefont Tag?
7. What is property?
8. Explain about attribute?

SECTION-B

Answer any **SIX** Questions, Choosing atleast **ONE** form each unit
Each Carries 10 marks
(Marks:6×10=60)

UNIT I

9. Write about tools of WWW.
10. Explain the advantages and disadvantages of Internet.
11. Explain about networks

UNIT II

12. Explain about email advantages and disadvantages
13. Explain about TCP/IP protocol
14. Write about various message components in creating email.

UNIT III

15. Explain about HTML tags.
16. Explain about Html Lists
17. Explain about text formatting tags in Html

UNIT IV

18. Explain about tables in Html
19. Write about form controls used in designing a web page.
20. Explain about Frames with example

UNIT V

21. Explain about CSS
22. Illustrate how to create a webpage with your own styles
23. Write about properties and values related to text, fonts and colors

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Sc. Computer Science Syllabus Under CBCS w.e.f.2017-2018
VI SEMESTER
Paper-VIII : Elective II(C)
COMPUTER NETWORKS
Model paper

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **Five** Questions
(Marks:5×2=10)

1. Define Computer Networks
2. What is PAM in Sampling?
3. Explain Piggy backing
4. Explain Autonegotiation in Fast Ethernet
5. What are the notations to show and IP address
6. Draw the packet format in ARP
7. What is cryptography?
8. Explain FTP

SECTION-B

Answer any **SIX** Questions, Choosing atleast **ONE** form each unit
Each Carries 10 marks
(Marks:6×10=60)

UNIT I

9. Explain Network Topologies
10. Write about OSI reference model with neat diagram
11. Explain Guided media

UNIT II

12. Explain Error detection and Correction
13. What are the data link protocols. Explain about Stop and Wait Protocol?
14. Write about Traditional Ethernet Protocol

UNIT III

15. Explain Addressing in Network layer
16. Explain IPv4 Protocol
17. Explain about Internetworks

UNIT IV

18. Explain Process –to –Process delivery in transport Layer
19. Write about techniques used to improve Quality of Service(QOS)
20. Explain about Public-Key-Cryptography

UNIT V

21. Explain Domain Name System
22. Explain SMTP
23. Write about a) HTTP b) WWW

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Sc. Computer Science Syllabus Under CBCS w.e.f.2017-2018
III YEAR VI SEMESTER
Cluster C :paper-VIII :Elective II
CLOUD COMPUTING
Model Paper ((w.e.f.2017-2018))

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **FIVE** Questions
(Marks:5×2=10)

1. Cloud computing
2. On-demand self-service
3. Cloud Scenarios
4. Regulatory issues
5. Operational benefits in SAAS
6. Economic benefits
7. Salesforce.com as PAAS
8. Virtualization.

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×10=60)

UNIT-I

9. Write about the Origins of cloud computing/History of cloud computing.
10. Explain cloud computing components.
11. Explain the Essential Characteristics of cloud computing.

UNIT-II

12. Write about benefits and limitation of cloud computing.
13. Discuss about Privacy Concern with a Third party in cloud computing.
14. Write about security benefits.

UNIT-III

15. Write about cloud Architecture.
16. Write about cloud delivery models.
17. Explain about Google App Engine.

UNIT-IV

18. Write about Advantages of Cloud computing
19. Explain about Cloud deployment model.
20. Write about Amazon EC2.

UNIT-V

21. Define Virtualization of cloud computing.
22. Explain about Types of hardware virtualization.
23. Write about Desktop Virtualization .

D .R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
III YEAR I SEMESTER: FOOD TECHNOLOGY
Paper: APPLICATIONS OF COMPUTER SCIENCE
Model Paper(2019-2020)

213106

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

1. Software
2. Interpreter
3. Application Software
4. System Software
5. Flow Chart
6. Windows Explorer
7. Views in Powerpoint
8. Query in MS-Access

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

9. Explain Generations of Computers?
10. Write briefly about the characteristics of computers?
11. Explain different conversions of one number system to another number system

UNIT-II

12. Write Application and System Software?
13. Write Internal and External Commands of DOS?
14. Explain about File Management and Directory Structure?

UNIT-III

15. Explain in detail about Control Panel?
16. Explain in detail about formatting a document in MS-Word?
17. Write briefly about the Mail Merge?

UNIT-IV

18. Explain Applications of MS PowerPoint.
19. How to create ,Open and saving presentation in Power point
20. Explain about Functions in Excel

UNIT-V

21. Explain the Features of Ms-Access
22. How to creation, editing and deletion of macros
23. What is Form? How do you Create Forms Using MS-Access?

I BCOM (GENERAL)
SEMESTER-I
Paper-I: FUNDAMENTALS OF INFORMATION TECHNOLOGY
Model Paper(2016-17)

Time: 3 hours

Max.marks:60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

1. What is a Computer? Explain the Characteristics of a Computer.
2. Write the Input Devices of a Computer.
3. Write the following a) Tele conferencing b) Video Conferencing
4. Write the following a) File Exchange b) Modem
5. What is OS? Explain about various types of Operating system.
6. Describe the architecture of LAN.
7. Explain the Services available on internet.
8. Write the Applications of E-Commerce.

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

9. Explain Block diagram of Digital Computer.
10. What is Memory? Explain Different types of Memories?
11. Explain about IT enabled services.

UNIT-II

12. Write about Modern Communication services.
13. What is Email? Explain the steps for creating Email-id.
14. Explain the following a)FAX b) Voice mail c)Bandwidth

UNIT-III

15. List and explain about internal and external commands DOS.
16. Explain the features of windows accessories.
17. Explain the following a)Wild card characters b)Computer Virus c) Cryptology

UNIT-IV

18. Describe the Computer Network Topologies and list their relative merits and Limitations.
19. Explain about LAN and their Architecture.
20. Explain about WAN and their Architecture.

UNIT-V

21. Explain the Various Applications of E-Commerce.
22. What is a E-Commerce? Write the Advantages and Limitations of E-Commerce.
23. Explain about Usage and Applications of Multimedia on web.

I BCOM(GENERAL) SEMESTER-II
Paper -II :MS-OFFICE
Model Paper

Time: 3 hours

Max.marks:60

SECTION-A

Answer any **FIVE** Questions
(Marks:6×2=12)

1. Features of processing.
2. Opening a word document.
3. Write about Templates.
4. Write about Wizards.
5. Write the following a) Worksheet b) Filtering.
6. Write the following a) Database b) Record.
7. Write about Slide show in MS-Power point.
8. What is Banners in Ms-Publisher.
9. Write about reports.
10. Write about forms.

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

11. Describe the Advantages and applications of Word Processor software.
12. Explain the mail merge feature of Ms Word.
13. Explain formatting text in Ms Word.

UNIT-II

14. Explain about different types of functions available in MS Excel.
15. What is Chart? How do you Create Charts in MS-Excel
16. Explain about templates and macros in MS-Excel.

UNIT-III

17. Explain the features and applications of MS Access.
18. What is Form? How do you Create Forms Using MS-Access?
19. Explain quires and reports

UNIT-IV

20. Explain Applications of MS PowerPoint.
21. Explain Text Animation in PowerPoint Presentation
22. Write briefly about Custom Animation.

UNIT-V

23. Explain about Creating Letter heads.
24. Explain about Business cards.
25. Explain about Greeting cards.

II B.Com(General)
Under CBCS With Effect From Academic Year 2016-2017
III SEMESTER
PROGRAMMING IN C
Model Paper(2018-2019)

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

1. Algorithm
2. Flow chart
3. Data type
4. keyword
5. Break and Continue Statement
6. Go to statement
7. Return statement
8. pointer

SECTION-B

Answer any **Six** questions, at least One from each unit
(Marks:6×8=48)

UNIT-I

9. Explain Basic Data type in C.
10. Explain about different type of operators.
11. Explain I/O statements in C

UNIT-II

12. Explain switch statement with suitable example.
13. Explain about Iterative statements.
14. Explain conditional statements

UNIT-III

15. Explain about functions .
16. Explain about Scope of variables
17. Explain the following a) call by value b) call by reference

UNIT-IV

18. Explain about one dimensional array with example
19. Explain String character functions
20. Write operations on array

UNIT-V

21. Explain about Enumerated Data Types
22. Write about difference between Structures and Unions
23. Explain about Pointer

DEPARTMENT OF COMPUTER SCIENCE
II B.Com (General) Under CBCS with Effect From Academic Year 2016-2017
II YEAR IV SEMESTER
PAPER:IV : PROGRAMMING IN C++
Model Paper(2018-2019)

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

1. Identifier
2. Scope Resolution Operator
3. IF statement
4. Define Class
5. Array
6. Function
7. Method Overloading
8. Destructor

SECTION-B

Answer any **SIX** questions, at least One from each unit
(Marks:6×8=48)

UNIT-I

9. What are applications of C++?
10. Explain different types of constants
11. Explain C++ tokens, Write factorial program in C++.

UNIT-II

12. Explain about difference between C and C++.
13. Explain about operators in C++.
14. Explain about data types in C++

UNIT-III

15. a) Explain switch statement with suitable example
b) Explain if..else statement with suitable example
16. What is difference between while and do..while statements.?
17. Explain in detail about jumps in loops

UNIT-IV

18. Explain about functions
19. Explain about arrays with suitable example
20. Write about call by value and call by reference

UNIT-V

21. Write about types of Inheritance
22. Write about constructors
23. Explain about array of objects

III B.Com (GENERAL)
SEMESTER-V
DATABASE MANAGEMENT SYSTEMS
PAPER-V
MODEL PAPER

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **FIVE** Questions
(Marks:5×2=10)

- 1 a. Define Database
- b. Define Meta Data
- c. What are types of attribute?
- d. Define term Entity.
- e. What is primary key?
- f. What is difference between strong entity and weak entity?
- g. What is transitive dependency?
- h. What is BCNF?
- i. Define DDBMS.
- j. What is index file organization?

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
Each question carries 10 marks
(Marks:6×10=60)

UNIT-I

2. Define Database Systems .What are its advantages?
3. Explain the components of DBMS
4. Write about Costs and Risks of Database approach.

UNIT-II

5. Explain about ER model and its notation.
- 6.Explain about (a) Relational Algebra (b)integrity constraints
- 7.Difference among Generalization, specialization, aggregation.

UNIT-III

8. What is Normalization? Explain different normal forms.
- 9.What is transaction ?Explain its properties and states
10. Explain about concurrency control.

UNIT-IV

11. Write about File Organization system.
12. Explain about distributed database system and its characteristics?
13. Explain about data base Security, recovery?

III. B.com (General)-SEMESTER-V
Paper-VI ELECTRONIC COMMERCE
Model paper

Time: 3 Hrs

Max. Marks: 70

SECTION-A

Answer any **FIVE** Questions

(Marks:5×2=10)

1. (a) What is electronic commerce?
(b) What are the advantages of electronic commerce?
(c) Write about Global information system?
(d) Define WWW?
(e) Write about HTTP?
(f) Write short note on hyper media?
(g) What are the phases on mercantile models from the Merchants perspective?
(h) Write short note on Credit cards?
(i) Write short note on Debit cards
(j) what is based marketing?

SECTION-B

Answer any **SIX** questions, choosing at least **ONE** from each unit.

Each question carries 10 marks

(Marks:6×10=60)

UNIT-1

2. What are the potential benefits of Electronic commerce?
3. Explain different types of electronic commerce models?
4. Explain in detail Global information Systems?

UNIT-2

5. Explain about TCP/IP and FTP protocols?
6. Write about Electronic commerce security?
7. Explain about Encryption techniques?

UNIT-3

8. Explain about consumer oriented applications?
9. Explain about mercantile from the consumer's perspective?
10. Write a short note on Electronic payment systems?

UNIT-4

11. Explain about scope of marketing Business?
12. Explain in detail 4 Ps?
13. Write a short note on marketing supply chain Management?

DEPARTMENT OF COMPUTER SCIENCE
I BSC(HONORS) Computer Science
I YEAR I SEMESTER
Paper I: Programming Fundamentals using C/C++
Modified Model Paper(2017-2018)

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

49. Variable
50. keyword
51. Array
52. Function definition
53. pointer
54. What are access specifiers in C++?
55. New and Delete operators
56. Define inheritance

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

9. Explain difference between OOP and POP?
10. Write briefly different operators?
11. Write briefly different data type?

UNIT-II

12. Write about conditional branching statements?
13. Explain in detail about functions with example?
14. Explain about Arrays with example?

UNIT-III

15. Write about Structures with suitable examples?
16. Explain in detail about pointers with suitable examples?
17. What is pointer and How to represent pointers to structures?

UNIT-IV

18. Explain in detail about file I/O?
19. Write about preprocessor directives?
20. Explain about constructors?

UNIT-V

21. Explain about Function Overloading?
22. What are different types of inheritances? Explain about multilevel inheritance?
23. Write about Exceptional Handling?

DEPARTMENT OF COMPUTER SCIENCE
B.Sc.(Honours)Computer Science Syllabus Under CBCS w.e.f.2016-2017
I YEAR I SEMESTER
COMPUTER SCIENCE (C-II)
Paper II: COMPUTER SYSTEM ARCHITECTURE
Modified Model Paper(2017-18)

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

24. Flip-flops
25. Registers
26. Number System
27. Addition Of Positive Numbers.
5. Instruction Cycle Phases
6. Pipelining
7. Assembly Language
8. Cache Memory

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

9. Explain briefly about Logic Gates.
10. Write about Decoders and multiplexers.
11. Write about memory unit.

UNIT-II

12. Explain about fixed and floating point representation.
13. Explain the following
 - a)GRAY code b)BCD code.
14. Explain briefly about multiplication and division algorithms for integers,

UNIT-III

15. Explain in detail about Bus system.
16. Explain in detail about , input-output and interrupt.
17. Explain the instruction set.

UNIT-IV

18. Explain about the addressing modes ?
19. Write about micro programmed control
20. Explain in detail about stack organization.

UNIT-V

21. Explain briefly about Direct Memory Access.
22. Write about Priority Interrupt.
23. Write about Associative memory.

DEPARTMENT OF COMPUTER SCIENCE
I B.Sc.(Honours)Syllabus Under CBCS w.e.f.2016-2017
II SEMESTER
COMPUTER SCIENCE (C-III)
Programming in Java
Model Paper

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **FIVE** Questions
(Marks:6×2=12)

57. Variable
58. Type conversion
59. Array
60. Buffer Classes defintion
61. Garbage Collection
62. Inheritance
63. Exception
64. Applet
65. JVM
66. Package.

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

11. Explain features of JAVA
12. Write about conditional branching and iterative statements
13. Write briefly different operators in Java.

UNIT-II

14. Write about String methods with suitable example
15. Explain in detail about functions with example
16. Explain about input and out statements in java

UNIT-III

17. Write about Class Constructors, Method Overloading.
18. Explain in detail about Interfaces with suitable examples
19. Write about Principles of Object-Oriented Programming

UNIT-IV

20. Explain in detail about Exception handling
21. Write about life cycle of thread
- 22 . Explain in detail JDBC.

UNIT-V

23. Explain about Applets with suitable Example
24. Explain about design and implementation of GUIs using the AWT controls
25. Write about components of Swings

DEPARTMENT OF COMPUTER SCIENCE
BSC(HONORS)Computer Science
II YEAR III SEMESTER
COMPUTER SCIENCE (C-V): DATA STRUCTURES
Model Paper(2018-2019)

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

1. Data Structures
2. Arrays
3. Array Representation Of stack
4. De-Queue
5. Binary Tree
6. Recursion
7. Linear Search
8. Hashing

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

9. Explain about array operations
10. Explain about Sparse Matrices and its representation
11. Write about types of linked lists

UNIT-II

12. Explain about stack operations
13. Explain array and linked representation of Queues
14. Explain about applications of stack

UNIT-III

15. Explain about tree traversal techniques in detail with examples
16. Write about Threaded binary tree
17. Explain about AVL trees

UNIT-IV

18. Explain about Linear search, Binary search
19. Explain about Bubble sort with example
20. Write about Selection sort with suitable example

UNIT-V

21. Write about Hash table
22. Write about Resolving collision by Open Addressing
23. Explain about Hash function.

DEPARTMENT OF COMPUTER SCIENCE
BSC(HONORS)COMPUTER SCIENCE
II YEAR III SEMESTER
COMPUTER SCIENCE (C-VI): Operating Systems
Model Paper(2018-2019)

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **SIX** Questions (Marks:6×2=12)

1. Operating System
2. Time Sharing Systems
3. System Calls
4. Kernels
5. Thread
6. Dead Lock
7. Paging
8. Segmentation

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

9. Explain various types of Operating System
10. Explain about multi programming system
11. Write about process control and real time systems

UNIT-II

12. Explain about Processor and user modes
13. Write about system calls and system programs
14. Explain in detail about Kernels

UNIT-III

15. Write about cpu scheduling algorithms with examples .
16. Write methods for inter-process communication
17. Explain about Dead locks

UNIT-IV

18. Explain about Page Replacement Algorithm
19. Explain about virtual memory
20. Write about memory allocation strategies

UNIT-V

21. Write about file allocation methods
22. Write about Authentication
23. Explain about Internal access Authorization

DEPARTMENT OF COMPUTER SCIENCE
BSC(HONORS)COMPUTER SCIENCE
III SEMESTER
COMPUTER SCIENCE (C-VII): Computer Networks
Model Paper(2018-2019)

Time: 3 Hrs

Marks:60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

24. Network
25. Transition Control Protocol
26. FDM
27. Error Detection
28. Framing
29. Repeaters
30. DNS
31. WWW

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

32. Explain various types of network topologies
33. Explain about OSI reference model
34. Write about TCP/IP protocol suite

UNIT-II

35. Explain about multiplexing Techniques
36. Write about digital to analog modulation
37. Explain about connectionless datagram switching, connection-oriented virtual circuit switching

UNIT-III

38. Write about Error detection and error correction techniques.
39. Write about framing and flow control
40. Explain about stop and wait ARQ, go-back-n ARQ

UNIT-IV

41. Explain about CSMA/CD protocols
42. Explain about routing algorithms
43. Write about Internet control protocols

UNIT-V

44. Explain three way Hand Shaking Technique
45. Explain about DNS protocol
46. Write about HTTP protocol.

DEPARTMENT OF COMPUTER SCIENCE
B B.Sc.(Honours)Computer Science Syllabus Under CBCS w.e.f.2017-18
IV SEMESTER
COMPUTER SCIENCE(C-VII):DESIGN AND ANALYSIS OF ALGORITHMS
Model Paper (2018-2019)

Time : 3 Hours

Max Marks : 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

1. What is Analysis?
2. What is Time complexity?
3. What is Dynamic Programming?
4. Explain Insertion Sort?
5. Explain Quick Sort?
6. Explain Red-Black Trees?
7. Explain about Breadth First Search?
8. What is String Matching?

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT – I

- 9.Explain about Asymptotic notations.
10. Explain about time and space complexity.
- 11.Explain about iterative techniques.

UNIT – II

- 12.What is a travelling sales person's problem using Divide & Conquer technique.
- 13.What is Dynamic Programming.
- 14.Explain Greedy Method.

UNIT – III

- 15.Write Merge sort technique.
- 16.Write about Quick Sort.
- 17.Explain Bucket Sort.

UNIT – IV

- 18.Explain about Amortized analysis.
- 19.Explain about AVL trees.
- 20.Write about Red-Black trees.

UNIT – V

- 21.Explain about minimum Spanning Trees.
- 22.Explain about String Matching
- 23.Explain about DFS spanning tree.

DEPARTMENT OF COMPUTER SCIENCE
B.Sc.(Honours)Computer Science Syllabus Under CBCS w.e.f.2017-18
IV SEMESTER

COMPUTER SCIENCE (C-VIII):Software Engineering
Model Paper (2018-2019)

Time : 3 Hours

Max Marks : 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

1. What is software?
2. Explain the Software Characteristics
3. Write about Data flow.
4. Explain SRS
5. Write about software design
6. Define Black -Box Testing.
7. Write about SQA.
8. Explain Basic path testing

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

9. Explain in detail about Frame Work and Umbrella Activities .
10. Explain Waterfall and RAD process models?
11. Explain Capability Maturity Model Integration (CMMI)?

UNIT-II

12. Explain the Requirement Engineering Processes?
13. Explain Analysis Model in detail?
14. Explain Characteristics and Components of SRS?

UNIT-III

15. Explain Estimation in project planning process?
16. Explain Project Scheduling?
17. Explain Software Risk Management?

UNIT-IV

18. Explain in detail about architectural styles and patterns?
19. Write about Software Architecture.
20. Explain Quality Management.

UNIT-V

21. Explain Testing Strategies and strategic approach to testing?
22. Explain different types of software testing with its advantages?
23. Explain White –Box and Black-Box Testing and its type?

DEPARTMENT OF COMPUTER SCIENCE
B.Sc.(Honours)Computer Science Syllabus Under CBCS w.e.f.2017-18
IV SEMESTER
COMPUTER SCIENCE (C-IX): Database Management Systems
Model Paper (2018-2019)

Time : 3 Hours

Max Marks : 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

- 1 . Define Database
2. Define term Entity and Attribute.
3. What is primary key ?
4. What is difference between strong entity and weak entity?
5. What is Functional dependency?
6. Define normal form
7. what is dead lock?.
8. what are Operations on Files?

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

9. Define Database Systems .What are its advantages?
10. Explain Database architecture in detail.
11. Write about Database Models.

UNIT-II

- 12.Explain about ER model and its notation.
- 13.Explain about (a) Relational Algebra (b)Relational constraints
- 14.Explain Relational Model concepts.

UNIT-III

15. Explain about Mapping ER\EER model to Relational database
- 16.What is Normalization? Explain different normal forms.
17. Explain about BCNF

UNIT-IV

- 18.What is transaction ?Explain its properties and states
- 19.Explain about concurrency control.
- 20.Explain in detail about Deadlock

UNIT-V

21. Write about file operations
22. Write about File Organization system
- 23.Explain in detail about indexing structures for files.

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Sc.(Honours)Computer Science Syllabus Under CBCS w.e.f.2018-19
V SEMESTER
COMPUTER SCIENCE (C-XI): Internet Technologies
Model Paper(2018-2019)

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **FIVE** Questions
(Marks:5×2=10)

1. Datatypes
2. operators
3. JDBC
4. Servlet
5. Cookies
6. HTTP request
7. Java server pages
8. BDK

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×10=60)

UNIT-I

28. Explain about array list
29. Explain about functions
30. Write about events and event handling.

UNIT-II

31. Explain about Establishing Connectivity and working with connection interface
32. Explain Creating and Executing SQL Statements
33. Explain about Working with Result Set Objects

UNIT-III

34. Explain about servlet life cycle
35. Write about tracking session in servlets
36. Explain about client request and server responds

UNIT-IV

37. Explain about Implicit JSP Objects
38. Explain about jsp client request and server responds
39. Write about JSP tags

UNIT-V

40. Write about java beans advantages
41. Write about JAR file
42. Explain about Developing a simple bean using BDK

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Sc.(Honours) Computer Science Syllabus Under CBCS w.e.f.2018-2019
V SEMESTER
COMPUTER SCIENCE (C-XII): Theory Of Computation
Model paper

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **FIVE** Questions
(Marks:5×2=10)

1. What is power of Alphabet?
2. What are the basic operations for strings?
3. Define Finite Automata.
4. Define Regular Expression
5. What are context free languages?
6. What is ambiguity?
7. How Turing machine is different from FA and PDA in terms of capability?
8. Define Decidability

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×10=60)

UNIT-I

9. What is Automata Theory. Explain the following in detail.
 - a. Alphabet
 - b. String
 - c. Language.
10. a. What are different operations on languages?
b. Consider the string $x=110$ and $y=0110$ then find (i) xy (ii) yx (iii) x^2 (iv) ϵy
c. Describe the following languages over the input set $A= \{ a,b \}$
 - (i) $L_1= \{ a, ab, ab^2 \}$
 - (ii) $L_2= \{ a^m b^n / n > 0 \}$
 - (iii) $L_3= \{ a^n b^n / n \geq 1 \}$
11. Explain the following with examples
 - a. Concatenation
 - b. Kleene closure

UNIT-II

12. Define DFA, NFA. Design DFA,NFA,NFA- ϵ for the given substring $abba$ over $\Sigma=\{a,b\}$.
13. a. Explain the difference between DFA and NFA.
b. Construct NFA with ϵ which accepts a language consisting the strings of any number of a's followed by any number of b's followed by any number of c's.
14. Convert the given NFA into its equivalent DFA.
15. a. Define Regular Expression. Give an example.

- b. Write the procedure for constructing the finite automata for regular expression.
- 16. a. Explain about transition graphs in detail.
b. Explain the difference between finite automata and transition graphs with suitable example.
- 17. a. Prove that the language L given by $L = \{a^m b^n \mid m \neq n, m \text{ and } n \text{ are positive integers}\}$ is not regular.
b. Closure properties of Regular languages

UNIT-IV

- 18. Define PDA. Design PDA for the language $L = a^n b^n$ where $n \geq 1$
- 19. Convert the following CFG into CNF
 - a. $S \rightarrow aaaaS$
 $S \rightarrow aaaa$
 - b. $S \rightarrow aSa \mid bSb \mid a \mid b$
- 20. Discuss about ambiguities in grammars and languages in detail.

UNIT-V

- 21. What is a Turing Machine? Discuss its halting problem.
- 22. Write a short notes on
 - a. Recursively enumerable and
 - b. Recursive languages.
- 23. a. Explain about Universal Turing Machines.
c. Explain Language decidability

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Sc.(Honours) Computer Science Syllabus Under CBCS w.e.f.2018-2019
V SEMESTER
Discipline Specific Elective Paper (DSE--1):
INFORMATION SECURITY
Model Paper(2018-2019)

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **FIVE** Questions
(Marks:5×2=10)

1. Define Cipher Text?
2. Define Cryptography?
3. Explain the uses of Encryption?
4. Define Viruses?
5. Define substitution cipher with types?
6. How to secure a E-mail?
7. Define FireWall?
8. Define Risk Analysis?

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×10=60)

UNIT-I

- 9 Explain Security Attacks and Security Services?
- 10 Explain Symmetric and Asymmetric key Cryptography?
- 11 Explain about Digital Signature and Digital Certificates?

UNIT-II

12. Explain Transposition Cipher?
13. Explain DES(Data Encryption Standards) Algorithm?
14. Explain Uses of Encryption?

UNIT-III

15. Explain Viruses and other Malicious Codes?
16. Explain File Protection Mechanism?
17. Explain Security policies and Models of Security?

UNIT-IV

18. Explain Database Security Requirements, Reliability and Integrity?
19. What is Firewalls and explain different types of Firewalls?
20. Explain Intrusion Detection Systems?

UNIT-V

21. Explain Security Planning?
22. Explain about Organisational security policies?
23. Explain about Legal privacy and Ethical issues in computer Security?

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Sc.(Honours) Computer Science Syllabus Under CBCS w.e.f.2018-2019
V SEMESTER
Discipline Specific Elective Paper (DSE--2): Data Mining
Model paper

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **FIVE** Questions
(Marks:5×2=10)

67. Define data mining?
68. KDD process
69. Data transformation methods
70. What are reduction strategies
71. Concept hierarchy
72. What is Association rule mining
73. What is cluster analysis
74. Outlier analysis

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×10=60)

UNIT-I

75. Explain Data mining functionalities
76. Explain about data mining task primitives
77. Write about major issues in data mining.

UNIT-II

78. Explain about Data preprocessing techniques
79. Explain about data cleaning
80. Explain any two strategies in data reduction

UNIT-III

81. Explain Attribute Oriented Induction
82. Explain Analytical characterization
83. Explain mining class comparisons

UNIT-IV

84. Explain classification by Decision tree induction
85. Explain Bayesian classification
86. Write about classification by Back propagation

UNIT-V

87. Write about Types of data in cluster analysis
88. Write about partitioning methods
89. Explain density-based methods

DEPARTMENT OF COMPUTER SCIENCE

III BSC(HONORS) Computer Science

VI SEMESTER

Paper VI: Artificial Intelligence

Modified Model Paper(2018-2019)

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **SIX** Questions

(Marks:5×2=10)

1. Turing test?
2. Control Strategies?
3. Define DFS and write the advantages?
4. What is Heuristics Search?
5. Production System?
6. Define AI and its applications?
7. , Probabilistic Reasoning?
8. Conceptual Dependencies?

SECTION-B

Answer any **SIX** questions, at least **One** from each unit

(Marks:6×10=60)

UNIT-1

9. Agent approaches of AI?
10. Agents, their structure, behavior and environment?
11. Background and Applications of AI?

UNIT-2

12. What are the Problem Characteristics?
13. Heuristics Search Techniques?
16. Breadth First Search, Depth First Search?

Unit-3

17. write Resolution Principle?
18. write Frames, and Scripts?
19. Conceptual Dependencies?

Unit-4

20. Write Probabilistic Reasoning?
21. Explain Bayesian Probabilistic Inference?
22. what is Truth Maintenance System?

Unit-5

23. Recursive and Augmented Transition Nets?
24. Parsing Techniques?
26. Context-Free and Transformational Grammars?

DEPARTMENT OF COMPUTER SCIENCE
III BSC(HONORS) Computer Science
III YEAR VI SEMESTER
Paper VI: COMPUTER GRAPHICS
Modified Model Paper(2018-2019)

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **FIVE** Questions

(Marks:5×2=10)

1. Define pixel addressing?
2. Explain about a) keyboard b) track ball
3. Write transformations for reflection and shearing in 3D?
4. Explain 2d-composite transformations
5. Define window
6. What is viewing pipeline in 3D
7. Explain key frame system
8. Explain RGB color models

SECTION-B

Answer any **SIX** questions, at least **One** from each unit

(Marks:6×10=60)

UNIT-I

9. Explain about color CRT monitors
10. Write about introduction and application of computer graphics
11. Write about raster scan and random scan systems

UNIT-II

12. Explain DDA line generation algorithm
13. Write about input devices
14. Discuss circle algorithm

UNIT-III

15. Explain 2D transformations with examples
16. Write about Cohen Sutherland , Hedgeman algorithm
17. Explain 2D- viewing with examples

UNIT-IV

18. Discuss 3D viewing in details
19. Write about 3D Transformations
20. Define window, viewport, WCS, NDCS, WSCS

UNIT-V

21. Explain the RGB and YIQ models
22. Explain color animations in details
23. Write about HVS, HLS and CMY models

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Sc. Computer Science Syllabus Under CBCS w.e.f.2017-2018
III YEAR VI SEMESTER
Cluster C :paper-VIII :Elective II
CLOUD COMPUTING
Model Paper ((w.e.f.2017-2018))

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **FIVE** Questions
(Marks:5×2=10)

1. Cloud computing
2. On-demand self-service
3. Cloud Scenarios
4. Regulatory issues
5. Operational benefits in SAAS
6. Economic benefits
7. Salesforce.com as PAAS
8. Virtualization.

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×10=60)

UNIT-I

9. Write about the Origins of cloud computing/History of cloud computing.
10. Explain cloud computing components.
11. Explain the Essential Characteristics of cloud computing.

UNIT-II

12. Write about benefits and limitation of cloud computing.
13. Discuss about Privacy Concern with a Third party in cloud computing.
14. Write about security benefits.

UNIT-III

15. Write about cloud Architecture.
16. Write about cloud delivery models.
17. Explain about Google App Engine.

UNIT-IV

18. Write about Advantages of Cloud computing
19. Explain about Cloud deployment model.
20. Write about Amazon EC2.

UNIT-V

21. Define Virtualization of cloud computing.
22. Explain about Types of hardware virtualization.

DEPARTMENT OF COMPUTER SCIENCE

**B.Com.(Computer Applications)Syllabus Under CBCS w.e.f. 2016-2017
I YEAR 1 SEMESTER**

**Paper - I: Computer Fundamentals & Photoshop
MODIFIED MODEL PAPER(2017-18)**

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

43. Characteristics of a Computer.
44. Softcopy Devices
45. Floppy Disks
46. Software
47. Cache Memory
48. Flow Charts
49. Internet
50. What is Photoshop?

SECTION-B

Answer any **SIX** questions, at least **One** from each unit
(Marks:6×8=48)

UNIT-I

51. Explain about Block diagram of digital computer
52. Explain briefly about Generations of a Computer
53. Explain about Input/output Devices of a Computer

UNIT-II

54. What is Memory Hierarchy? Write about Primary Memory
55. What is a Binary System? Covert a Binary Number $(1101100)_2$ in to a Decimal Form and Octal Form
56. Write about Optical Drives

UNIT-III

57. Explain in detail about System S/W
58. What are the Control Structures used in Algorithms?
59. Explain about middle ware, firm ware

UNIT-IV

60. Explain about Connecting Media
61. Explain about Network topologies
62. Explain about internet services

UNIT-V

63. Explain about tool box
64. Explain working with filters
65. Explain working with layers

DEPARTMENT OF COMPUTERSCIENCE

B.Sc(Computer Science) Syllabus Under CBCS w.e.f.2015-2016 (Modified in April 2016)

I YEAR II SEMESTER

Paper-II: PROGRAMMING IN C

Model Paper

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **FIVE** Questions

(Marks:6×2=12)

- 90. Flow chart
- 91. keyword
- 92. Goto statement
- 93. Function definition
- 94. Array
- 95. String
- 96. pointer
- 97. Types of files
- 98. Differentiate Structure and Union
- 99. String Functions

SECTION-B

Answer any **SIX** questions, at least **One** from each unit

(Marks:6×8=48)

UNIT-I

- 100. Explain about Generations Of Programming Languages
- 101. Write briefly different operators available in 'C'
- 102. Write briefly different data type in 'C'

UNIT-II

- 103. Write about conditional statements
- 104. Explain about functions
- 105. Explain about iterative statements

UNIT-III

- 106. Write about array types
- 107. Write a program for addition of two matrix
- 108. Explain about string and character functions

UNIT-IV

- 109. Explain about array of pointers
- 110. Explain difference between Structures and unions
- 111. Explain about Enumarated data types

UNIT-IV

- 112. Explain Reading Data from Files and Writing Data from Files
- 113. Explain about Error Handling during File Operations.
- 114. Write functions for selecting a record randomly.

DEPARTMENT OF COMPUTER SCIENCE
II B.Com(CA) Under CBCS With Effect From Academic Year 2016-2017
III SEMESTER
Paper – III :OFFICE AUTOMATION TOOL
Model Paper(2018-2019)

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any SIX Questions
(Marks:6×2=12)

23. Workbook
24. Different Cell References In Excel
25. Cell Formatting
26. Parts Of Chart
27. Macro
28. Report
29. Wizard
30. Relational Database

SECTION-B

Answer any SIX questions, at least One from each unit
(Marks:6×8=48)

UNIT-I

31. What is a Spread Sheet? What are the Features of Spread Sheets?
10. Explain the following in Excel
 - a) Number formatting b) auto fill and custom fill
11. Explain Entering and editing data in worksheet

UNIT-II

12. Explain how to enter and edit formula in excel.
13. Explain different types of functions available in Excel.
14. Write different formatting options in Excel

UNIT-III

15. Explain Different types of charts.
16. How to creation, editing and deletion of macros
17. Explain the following
 - a) Data maps, graphs b) data sorting, filtering

UNIT-IV

18. Explain the Features of Ms-Access
19. Explain how to create table by using design view, table wizard
20. What is Form? How do you Create Forms Using MS-Access?

UNIT-V

21. Explain Creating and using select queries in MS-Access?
22. Write about Printing Reports.
23. Explain about Relational Databases.

DEPARTMENT OF COMPUTER SCIENCE
B.Com(CA) Under CBCS With Effect From Academic Year 2016-2017
II YEAR IV SEMESTER

Paper:IV :Object Oriented Programming With C++
Model Paper(2018-2019)

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

1. What Is Oop?
2. Scope Resolution Operator
3. Reference Variable
4. Define Class
- 5 .Array
6. Function
7. Method Overriding
- 8 .Destructor

SECTION-B

Answer any **SIX** questions, at least One from each unit
(Marks:6×8=48)

UNIT-I

- 11 Explain Basic concepts of OOP's
12. Explain difference between OOP and POP
13. Explain a)Application of OOP's b)Benefits of OOP's

UNIT-II

14. Explain Structure of C++
15. Explain about operators in C++.
16. Write about Control structures.

UNIT-III

17. Explain about functions.
18. Explain about Arrays
19. Explain the following
 - a) inline functions b) function overloading

UNIT-IV

20. Explain about friend function and friend class
21. Explain about array of objects
22. Write about constructors

UNIT-V

23. Explain different types of inheritance.
24. Write about Operator overloading.
25. Explain about Virtual functions

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Com.(Computer Applications)Syllabus Under CBCS w.e.f. 2016-17
VI SEMESTER
Paper-VII: Elective-I(A)
OPERATING SYSTEMS
MODEL PAPER

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **Five** Questions

(Marks:5×2=10)

1. Define operating system
2. Write time sharing operating system
3. Define thread
4. Write about kernel
5. What is virtual memory?
6. Write about Segmentation
7. What is dead lock?
8. Define paging

SECTION-B

Answer any **SIX** Questions,Choosing atleast **ONE** form each unit

Each Carries 10 marks

(Marks:6×10=60)

UNIT-1

9. Write about computer system Architecture.
10. Explain Objective and functions of operating system.
11. Write about Evolution of Operating Systems

UNIT-2

12. Write about kernels.
13. Write about Preemptive and non-preemptive Scheduling algorithms (FCFS, SJF, RR)
14. Explain about system calls and system programs

UNIT-3

15. Write about file and directory structure
16. Explain about protection in file system.
17. Write about Disk Structure, Disk Attachment

UNIT-4

18. Write about Deadlock Avoidance .
19. Explain Deadlock Prevention.
20. Write about Deadlock Detection and Recovery from Deadlock

UNIT-5

21. Explain swapping.
22. Write about Logical & physical Address Space
23. Write about segmentation

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Com.(Computer Applications)Syllabus Under CBCS w.e.f. 2016-2017
III YEAR VI SEMESTER
(Cluster A) Paper-VIII : Elective-II-1
E-COMMERCE APPLICATIONS
MODEL QUESTION PAPER

Time: 3 Hours

Max. Marks : 70

Section-A

*Answer any **FIVE** of the following Questions:*

(5 x 2= 10 Marks)

1. What is E-commerce?
2. Write about E-business
3. Define WWW
4. Define supply chain management
5. Define EDI
6. Write about E-cash
7. Explain switch statement
8. Explain Break Statement with an example

SECTION-B

Answer any **SIX** Questions, Choosing atleast **ONE** form each unit

Each Carries 10 marks

(Marks:6×10=60)

Unit-1

9. What is E-commerce? Explain different types of E-commerce models?
- 10 . Explain advantages and disadvantages of E-commerce.
- 11 . Explain about three models of E-market.

Unit-2

12. Write in detail about Supply Chain Management.
13. What is Electronic Data Interchange (EDI)? Explain applications of EDI.
14. Explain advantages and limitations of EDI.

Unit-3

15. Explain different types of Electronic payment System.
16. What is E-security? Explain about Secure Electronic Transaction.
17. Explain about Secure-Socket Layer.

Unit-4

18. Explain different types of Operators in JavaScript.
19. Explain about input statement in JavaScript? With an Example.
20. Write about Decision making statements in JavaScript.

Unit-5

21. Explain while and do-while repetition statements? with an example.
22. Explain break and continue Statements with an example.
23. Explain how JavaScript is implemented in a HTML program.

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTER SCIENCE
B.Com.(Computer Applications)Syllabus Under CBCS w.e.f. 2016-17
VI SEMESTER
(Cluster A) Paper-VIII : Elective-II-2
DATABASE MANAGEMENT SYSTEM
MODEL PAPER

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **Five** Questions
(Marks:5×2=10)

1. Define data and information.
2. Define DBMS.
3. Write about Entity.
4. Write about DML Commands.
5. What are Aggregate Functions?
6. Write about Data types in PL/SQL.
7. Explain steps to create PL/SQL.
8. Define Primary Key and Foreign Key.

SECTION-B

Answer any **SIX** Questions,Choosing atleast **ONE** form each unit
Each Carries 10 marks
(Marks:6×10=60)

UNIT-1

9. Write about DBMS Architecture.
10. Explain Objective of DBMS & classification.
11. Write about Data Models?

UNIT-2

12. Write about Advantages of DBMS.
13. Write about Codd's rules.
14. Explain about Relational Set Operators.

UNIT-3

15. Write about E-R Model.
16. Explain (a) Attribute Classification (b) Relationship Classification
17. Write about Normalization.

UNIT-4

18. Write about SQL Commands.
19. Explain Set Operators.
20. Write about Aggregate Functions

UNIT-5

21. Explain (a) Structure of PL/SQL Program
(b) PL/SQL Operators
22. Write about Iterative Statements
23. Write about Conditional Statements

DEPARTMENT OF COMPUTER SCIENCE

**III B.Com (Computer Applications)
SEMESTER-V
Paper 5: Programming In Java
MODEL PAPER**

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **Five** Questions
(Marks:5×2=10)

1. Write a sample java program?
2. What are the concepts of java?
3. Define literals and mention types of literals in java?
4. Define Operator and mention it's types in java?
5. Explain Switch statement with syntax?
6. What is a Constructor?
7. Define Array?
8. How to extend a Thread in java?

SECTION-B

Answer any **SIX** Questions, Choosing atleast **ONE** form each unit
Each Carries 10 marks
(Marks:6×10=60)

UNIT I

9. Explain basic concepts of JAVA?
10. Write the differences between C & C++ and C++ & JAVA?
11. Explain the Structure of JAVA with Sample program?

UNIT II

12. Explain the types of Operators in java?
13. Explain the types of Datatypes in java?
14. What is a variable and explain the scope of a variable in java?

UNIT III

15. Explain about While and do-While Statements?
16. Explain about if statement and its types with syntax?
17. Explain for loop with a sample program?

UNIT IV

18. Explain about Constructors?
19. Explain method overloading with an example?
20. How to define a class and creating an object?

UNIT V

21. Explain the types of arrays in java?
22. Explain about Thread in java?
23. Explain about lifecycle of a thread?

DEPARTMENT OF COMPUTER SCIENCE
III B.Com (Computer Applications)
SEMESTER-V
Paper-6 :WEB TECHNOLOGY
MODEL PAPER

Time: 3 Hrs

Marks: 70

SECTION-A

Answer any **Five** Questions
(Marks:5×2=10)

24. What is internet?
25. Explain about web server
26. What is protocol?
27. Explain message composition in internet.
28. What is HTML?
29. What is a Basefont Tag?
30. What is property?
31. Explain about attribute?

SECTION-B

Answer any **SIX** Questions,Choosing atleast **ONE** form each unit
Each Carries 10 marks
(Marks:6×10=60)

UNIT I

32. Write about tools of WWW.
33. Explain the advantages and disadvantages of Internet.
34. Explain about how networks

UNIT II

35. Explain about email advantages
36. Explain about TCP/IP protocol
37. Write about various message components in creating email.

UNIT III

38. Explain about HTML tags.
39. Explain about Html Lists
40. Explain about text formatting tags in Html

UNIT IV

41. Explain about tables in Html
42. Write about form controls used in designing a web page.
43. Explain about Frames with example

UNIT V

44. Explain about CSS
45. Illustrate how to create a webpage with your own styles?
46. Write about properties and values related to text, fonts and colors

I B.Sc (Honors) Mathematics
SEMESTER-I
Object Oriented Programming in C++
MODEL PAPER

Time: 3 Hrs

Marks: 60

SECTION-A

Answer any **SIX** Questions
(Marks:6×2=12)

1. Write Structure of C++?
2. Write Characteristics of OOPs language?
3. Explain new and delete operators in C++?
4. What is Data Abstraction?
5. Write an example for inheritance?
6. Define are class and object?
7. Rules of operator overloading?
8. What are Arithmetic Operators?

SECTION-B

Answer any **SIX** Questions, Choosing atleast **ONE** form each unit
Each Carries 10 marks
(Marks:6×8=48)

UNIT I

9. What are applications of C++?
10. Write the differences between C and C++?
11. Write a Structure of C++ with Sample program?

UNIT II

12. Explain about input/output streams in C++?
13. Explain about Arrays in C++?
14. Explain about Pointers in C++?

UNIT III

15. Explain OOP's concepts?
16. Explain types of Inheritance?
17. Explain types of polymorphism?

UNIT IV

18. Explain about Constructors?
19. What are Access Modifiers?
20. Explain about Assignment operator deep and shallow coping?

UNIT V

21. Explain concepts of namespaces and Static class members?
22. Explain about increment and decrement operators?
23. What is function overloading?

DEPARTMENT OF COMPUTER SCIENCE
B.Sc.(Honours) Mathematics Syllabus Under CBCS w.e.f.2018-2019
III SEMESTER
SEC1.2 Computer Graphics
Model paper

Time: 2 Hrs

Max. Marks: 50

Answer any FIVE Questions
(Marks:5×10=50)

1. Explain about Video display devices
2. Explain about, Raster Scan system display processors
3. Write about character generators
4. Explain about Input devices
5. Explain about line drawing algorithm
6. Explain about ellipse generation algorithm
7. Write about line clipping algorithm
8. Write about polygon clipping algorithm

D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
DEPARTMENT OF COMPUTERSCIENCE

B.Sc(Maths) Honours - IV SEMESTER

Operating system-Linux

Model Paper(2017-2018)

Time: 2 Hrs

Marks: 50

Answer any **FIVE** Questions

(Marks:5×10=50)

1. Write about Linux history and features?
2. Write about linux's relationship to unix?
3. Explain about the ext2 and ext2 file system?
4. Write about file permissions?
5. Detail about of resource management?
6. Write about pipes and fifos?
7. Explain about signals?
8. Write about and system and library calls?

MASTER OF COMPUTER APPLICATIONS
Third Semester
Paper 1:SOFTWARE ENGINEERING

UNIT – I

SOFTWARE, SOFTWARE ENGINEERING, AND PROCESS: The nature of Software, The unique nature of WebApps, Software engineering- A layered technology, The essence and principles of software engineering practice, Generic process model (framework), Process patterns, Process assessment and improvement, CMMI, Software myths.

PROCESS MODELS: Prescriptive process models: The waterfall model, Incremental process models, Evolutionary process models. The Unified process, Aspect oriented software development.

UNIT-II

UMBRELLA ACTIVITIES: Risk management, Software quality assurance, Software configuration management.

MEASUREMENT AND METRICS: Size oriented metrics, Function oriented metrics, Metrics for software quality.

SOFTWARE REQUIREMENTS: Introduction to functional and non-functional requirements, Requirements engineering activities, Eliciting requirements, *Requirements modeling*, Requirements validation, Software requirements specification(SRS), Requirements management.

UNIT III

DESIGN CONCEPTS: Software design quality guidelines and attributes, Design concepts, Design model.

SOFTWARE ARCHITECTURE: Architecture and its importance, Architectural Styles, Data design, Architectural design.

DESIGN : Structured view (Traditional view): Architectural mapping using data flow (Call and return architecture), Interface design, Function based component design.

PERFORMING USER INTERFACE DESIGN: Golden rules, User interface analysis and design, interface analysis, interface design steps.

PATTERN BASED DESIGN: Design patterns, Pattern based software design, Architectural patterns, Component level design patterns, User interface design patterns.

UNIT IV

TESTING STRATEGIES: A strategic approach to software testing – Verification and Validation – Organizing for Software Testing – Testing Strategies – Criteria for completion of testing – unit, integration, validation and system testing – debugging.

TESTING TACTICS: Testing Fundamental – White Box, Black Box, and Control Structure Testing – Object Oriented testing Methods.

PRODUCT METRICS: Metrics for the requirements model, Metrics for the design model, Metrics for source code, Metrics for testing, Metrics for maintenance.

TEST BOOK:

2. Software Engineering, A practitioner's Approach- Roger S. Pressman, 7th edition. McGrawHill International Edition.

REFERENCES:

6. Software Engineering- Sommerville , 8th edition, Pearson education.
7. Software Engineering- K.K. Agarwal & Yogesh Singh, New Age International Publishers
8. Software Engineering, an Engineering approach- James F. Peters, Witold Pedrycz, John Wiley.
9. Systems Analysis and Design- Shely Cashman Rosenblatt, Thomson Publications.

MASTER OF COMPUTER APPLICATIONS
Third Semester
SOFTWARE ENGINEERING
Model Paper

(With effect from the academic year 2018-2019)

Time : Three Hours

Max Marks : 70

PART-A

Answer any **FIVE** questions. Each Question carries **SIX** Marks
(Marks: 5 x 6 =30 Marks)

1. Explain software myths
2. What is layered technology
3. Explain waterfall process model
4. Discuss Incremental process model
5. What are functional and nonfunctional Requirements
6. Write the software project estimation
7. Explain about Software quality assurance
8. Explain performing user interface design
9. Write the verification and validation testing
10. Discuss white box and black box testing

PART-B

Answer any **FOUR** Questions. Each Question carries **TEN** Marks
(Marks:4 x 10 =40 Marks)

- 11) a) Explain Evolutionary process model
- b) Aspect oriented software development
- 12) What is CMMI? Explain the different levels of it
- 13) Explain umbrella activities
- 14) Explain size oriented metrics and function oriented metrics
- 15) Explain the Design concepts in Design Engineering
- 16) What is Architectural Design?
- 17) Discuss Testing strategies
- 18) Explain product metrics

MASTER OF COMPUTER APPLICATIONS
Third Semester
Paper2: DATABASE MANAGEMENT SYSTEMS

UNIT – I

Overview of Database Systems – Managing Data, A Historical Perspective, File Systems Vs Aa DBMS, Advantages of a DBMS, Describing and Storing Data in a DBMS, Queries in a DBMS, Transaction Management, Structure of a DBMS, People who work with DBMS

Introduction to Database Design – Database Design and ER Diagrams, Entities, Attributes and Entity Sets, Relationships and Relationship Sets, Additional Features of the ER Model, Conceptual Design with the ER Model, Conceptual Design for Large Enterprises, The Unified Modeling Language, Case Study: The Internet Shop

UNIT – II

The Relational Model – Introduction, Integrity Constraints over Relations, Enforcing Integrity Constraints, Querying Relational Data, Logical Database Design: ER to Relational, Introduction to Views, Destroying/ Altering Tables and Views, Case Study: The Internet Store

Relational Algebra and Calculus – Preliminaries, Relational Algebra, Relational Calculus, Expressive Power of Algebra and Calculus

UNIT – III

SOL: Queries, Constraints, Triggers – Overview, The Form of a Basic SQL Query, Union, Intersect and Except, Nested Queries, Aggregate Operators, Null Values, Complex Integrity Constraints in SQL, Triggers and Active Database, Designing Active Databases

UNIT – IV

Database Application Development – Accessing Databases from Applications, An Introduction to JDBC, JDBC Classes and Interfaces, SQLJ, Stored Procedures, Case Study

Internet Applications – Introduction, Internet Concepts, HTML Documents, XML Documents, The Three – Tier Application Architecture, The Presentation Layer, The Middle Tier

TEXT BOOK:

1. Database Management Systems by Raghu Ramakrishnan, Johannes Gehrke, 3rd Edition.

MASTER OF COMPUTER APPLICATIONS
Third Semester
DATABASE MANAGEMENT SYSTEMS
Model Paper

(with effect from the academic year 2018-2019)

Time : Three Hours

Max Marks : 70

PART-A

Answer any FIVE questions. Each Question carries SIX Marks

(Marks: 5 x 6 =30 Marks)

1. Explain File Systems Vs DBMS
2. Explain types of attributes
3. Write about Key constraints in relational model
4. What are set operations in Relational Algebra?
5. Write about Aggregate Operators
6. Explain about Nested Queries
7. Write about Uniform Resource Identifiers
8. Explain Embedded SQL
9. Write about Cursors
10. Write about servlets

PART-B

Answer any FOUR Questions. Each Question carries TEN Marks
(=40 Marks)

(Marks:4 x 10

11. a) Explain about advantages of a DBMS
b) Levels of abstraction in DBMS
12. Explain about E-R Model
13. a) Explain integrity constraints
b) Write about Views
14. Explain about Relational Algebra
15. Explain about Triggers and Active Databases
16. What is JDBC? How to Access Databases from Applications with an example
17. Explain about XML documents
18. Explain about Three-tier application architecture

MASTER OF COMPUTER APPLICATIONS

Third Semester

Paper3:DATA COMMUNICATIONS AND COMPUTER NETWORKS

UNIT I : Introduction, Network models – Internet model, OSI model, Physical Layer :Signals – Analog, Digital, Digital Transmission – Coding, Sampling Analog Transmission – Modulation of digital and analog signals, Telephone modem, Multiplexing – FDM, WDM, TDM, Transmission Media – cable, wireless, Circuit switching and Telephone network DSL Technology, Coble modem, SONET.

UNIT II : Data Link Layer : Error detection and correction, Data link control and Protocols – Stop and wait, Go-back-n, Selective repeat, HDLC Point to point access, Channelization, LANS – Traditional Ethernet, Fast Ethernet, Gigabit Ethernet, Wireless LAN'S – IEEE 802.11, Blue tooth. Connecting LANs – Connecting devices, Backbone networks, Virtual LANS, Cellular telephony, Satellite networks, Virtual circuit switching, Frame relay, ATM.

UNIT III: Network Layer : Inters-networks, Addressing, Routing Network layer Protocols – ARP, IP, ICMP, IPv6, Routing – Introduction, Unicast routing, Protocols – RIP, OSPF, BGP, Multicast Routing Protocols – DVMRP, MOSPF, CBT, PIM.

UNIT IV : Transport layer : Process – to –Process delivery, UDP, TCP, Data traffic, Congestion and Control, Quality of service (QOS) and techniques to improve QOS, Integrated services; QOS, in Switched networks Security : Introduction. Symmetric- Key management, Kerberos, IP level security: IPSEC, Transport layer security, signature, User authentication, Key management, Kerberos, IP level security : IPSEC, Transport layer security, Application layer security : PGP, Firewalls, Virtual Private networks.

Text Books:

1. Forouzan B A. Data Communications and Networking, 4th edition, Tata McGraw-Hill, 2007.
2. Tanenbaum A S, Computer Networks, 4th edition, Pearson Education, 2003.

Reference Books:

1. Stallings W, Data and Computer Communications, 7th edition, Pearson Education, 2004.
2. Gallo M A, and Hancock W M, Computer Communications and Networking Technologies, Thomson Brooks/Cole, 2002.
3. Comer D E, Computer Networks – and Internets with Internet Applications, 4th edition, Pearson Education, 2004.
4. Kurose J E, and Rose K W, Computer Networking – A Top-down Approach Featuring the Internet, Pearson Education, 2001.
5. Tomasi W, Introduction to Data Communications and Networking, Pearson Education, 2004.

MASTER OF COMPUTER APPLICATIONS
Third Semester
DATA COMMUNICATIONS AND COMPUTER NETWORKS
Modified Model Paper
(with effect from the academic year 2018-2019)

Time : Three Hours

Max Marks : 70

PART-A

Answer any FIVE questions. Each Question carries SIX Marks
(Marks: 5 x 6 =30 Marks)

1. What is Data Communication and what are possible ways of data transmission?
2. What do you mean by modulation and demodulation and explain working of a modem?
3. Write short notes on 10 Base 2, 10 Base 5 and 10 Base T standards.
4. Explain Piconet and Scatternet.
5. Explain different notations for IPV4 addressing and mention their classes.
6. Differentiate Unicast, Broadcast and Multicast Routing.
7. What do you mean by Cryptography and write short notes on cryptographic algorithms.
8. Write short notes on TCP and UDP.
9. Write short notes on DNS and firewalls.
10. Write about VAN

PART-B

Answer any FOUR Questions. Each Question carries TEN Marks
(Marks: 4 x 10 =40 Marks)

11. Explain OSI Reference Model.
12. Elucidate FDM, WDM and TDM multiplexing Techniques.
13. Explain various Data Link Controls Protocols.
14. Explain different types of LANS with example and mention their characteristics.
15. Explain the structure of IPV6.
16. Explain about ARP and RARP Network Protocols.
17. Explain three ways for Hand Shaking Technique.
18. Explain Architecture of E-mail.

MASTER OF COMPUTER APPLICATIONS
Third Semester
Paper 4:ADVANCED JAVA PROGRAMMING

UNIT – I

JAVA2 ENTERPRISE EDITION OVERVIEW – The ABC of Programming Languages, Taking Programming Languages Up a Notch, The Beginning of Java, Java Bytecode, The Advantages of Java, J2EE and J2SE

J2EE MULTI –TIER ARCHITECTURE – Distributive Systems, The Tier, J2EE Multi – Tier Architecture, Client Tier Implementation, Web Tier Implementation, Enterprise JavaBeans Tier Implementation, Enterprise Information Systems Tier Implementation, Challenges

UNIT – II

J2EE DATABASE CONCEPTS - Data, Database, Database Schema, The art of Indexing.

JDBC OBJECTS - The Concept of JDBC, JDBC Driver Types, JDBC Packages, A Brief Overview of the JDBC Process, Database Connection, Associating the JDBC/ODBC Bridge with the Database, Statement Objects, ResultSet

JDBC AND EMBEDDED SQL - Model Programs, Tables, Indexing, Inserting Data into Tables, Selecting Data from a Table, Metadata, Updating Tables, Deleting Data from a Table, Joining Tables, Calculating Data, Grouping and Ordering Data, Subqueries, View.

UNIT – III

JAVA AND XML – Generating an XML Document, Parsing XML, Quick Reference Guide.

JAVA SERVLETS – Java servlets and Common Gateway Interface Programming, A Simple Java Servlet, Reading Data from a Client, Reading HTTP Request Headers, Sending Data to a Client and Writing the HTTP Response Header, Working with Cookies, Tracking Sessions

JAVA SERVERPAGES – JSP, JSP Tags, Tomcat, Request String, Cookies, Session Objects

UNIT – IV

ENTERPRISE JAVABEANS – Enterprise JavaBeans, Deployment Descriptors, Session Java Bean, Entity Java Bean, message driven bean, JAR file, **JAVA INTERFACE DEFINITION**

LANGUAGE AND CORBA – The Concept of Object Request Brokerage, Java IDL and CORBA, The IDL Interface, The Client Side, The Server Side.**JAVA REMOTE METHOD INVOCATION** – Remote Method Invocation Concept, Server Side, Client Side

TEXT BOOK

2. The Complete Reference J2EE by Jim Keogh, Tata McGraw – Hill Edition

MASTER OF COMPUTER APPLICATIONS

Third Semester

ADVANCED JAVA PROGRAMMING

Model Paper

(with effect from the academic year 2018-2019)

Time : Three Hours

Max Marks : 70

PART-A

**Answer any FIVE questions. Each Question carries SIX Marks
(Marks: 5 x 6 =30 Marks)**

1. Explain about distributed systems
2. Write about java Byte code
3. What are the different types of JDBC drivers?
4. Write about Subqueries
5. Explain about ResultSet object in JDBC
6. Write about XML and DOM
7. Explain about Working with Cookies in servlets
8. Explain about Entity Java Bean
9. Explain about JAR files
10. Write about Java IDL

PART-B

**Answer any FOUR Questions. Each Question carries TEN Marks
(Marks:4 x 10 =40 Marks)**

11. Explain about advantages of java and J2EE and J2SE
12. Explain about J2EE Multi –Tier Architecture
13. Write the steps for process of JDBC
14. Explain about Statement Objects in jdbc
15. Explain about Sending Data to a Client and Writing the HTTP Response Header
16. Write about Java sever page tags
17. Explain about Enterprise JavaBeans
18. Explain about Remote Method Invocation Concept

MASTER OF COMPUTER APPLICATIONS

Third Semester

Paper 5:COMPUTER GRAPHICS

UNIT-I

Computer graphics: introduction, application areas of computer graphics, overview of graphic system, video display devices, raster scan system, random scan system, input and output devices. Output primitives: point and lines, line drawing algorithms mid points circle and ellipse algorithm. filled area primitives: scan line polygon fill algorithm, boundary fill and flood fill algorithm. image processing

UNIT-II 2D-geometric transformations: basic transformations: translation, scaling, rotation, composite transformations and other transformation. reflection and shear transformations.2d-viewing:the viewing pipeline, viewing co-ordinate reference frame, viewing functions, cohen Sutherland hedgeman polygon, clipping algorithm

UNIT-III

3D-concepts: transformation: parallel projection, perspective projection, bobby objects, BSP tree ,Bezier and B-SP line surfaces basic illumination models ,polygon rendering methods. Blobby objects, phong shading.

3D geometric transformations: translation, scaling, rotation, reflection and shear transformations, composite transformations

UNIT-IV

3D-viewing: viewing pipeline, viewing co-ordinates, viewing volume and general projection transforms and clipping. color models and applications: RGB color model, YIQ color model, CMY color model, HSV color model, HLS color models. computer animations: raster animations, computer animation languages, key frame system.

Text book:

Donald hearn and M. panlina baker, computer graphics c version ,second edition

MASTER OF COMPUTER APPLICATIONS

Third Semester

COMPUTER GRAPHICS

Model Paper

(with effect from the academic year 2018-2019)

Time : Three Hours

Max Marks : 70

PART-A

Answer any FIVE questions. Each Question carries SIX Marks

(Marks: 5 x 6 =30 Marks)

12. Define pixel addressing?
13. Explain about input devices?
14. Write transformations for reflection and shearing in 3D?
15. Explain 2d-composite transformations
16. Define window, view port, WCS, NDCS, WSCS
17. What are blobby objects
18. Discuss phong shading
19. What is viewing pipeline in 3D
20. Explain the image processing in CG
21. Explain RGB, YIQ color models

PART-B

Answer any FOUR Questions. Each Question carries TEN Marks

(Marks:4 x 10 =40 Marks)

22. Explain about video display devices
23. Explain DDA line generation algorithm
24. Explain 2D transformations with examples
25. Write about 3D concepts
26. Discuss 3D viewing in details
27. Explain BSP tree model and the advantages in detail with an example
28. Explain the animation concept in detail
29. Write about color model

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MCA IV SEM

Paper 1: DESIGN AND ANALYSIS OF ALGORITHMS

UNIT-I

Introduction: Algorithm, Pseudo code for expressing algorithms, Performance Analysis-Space complexity, Time complexity, Asymptotic Notation- Big notation, Omega notation, theta notation, Amortized analysis.

Disjoint Sets- disjoint set operations, union and find algorithms, spanning trees, connected components and biconnected components.

UNIT-II

Divide and conquer: General method, applications-Binary search, Quick sort, Merge sort, Strassen's matrix multiplication.

Greedy method: General method, applications-Job sequencing with deadlines, 0/1 knapsack problem, Minimum cost spanning trees, Single source shortest path problem.

UNIT-III

Dynamic Programming: General method, applications-Matrix chain multiplication, Optimal binary search trees, 0/1 knapsack problem, All pairs shortest path problem, Travelling sales person problem.

Backtracking: General method, applications-n-queen problem, sum of subsets problem, graph coloring, Hamiltonian cycles.

UNIT-IV

Branch and Bound: General method, applications - Travelling sales person problem, 0/1 knapsack problem- LC Branch and Bound solution, FIFO Branch and Bound solution. NP-Hard and NP-Complete problems: Basic concepts, non deterministic algorithms.

TEXT BOOKS:

1. Fundamentals of Computer Algorithms, Ellis Horowitz, Satraj Sahnii and Rajasekharam, Galgotia publications pvt. Ltd.
2. Algorithm Design: Foundations, Analysis and Internet examples, M.T. Goodrich and R. Tomassia, John Wiley and sons.

REFERENCES:

1. Introduction to Algorithms, second edition, T.H. Cormen, C.E. Leiserson, R.L. Rivest, and J.E. Stein, PHI Pvt. Ltd./ Pearson Education

2. Introduction to Design and Analysis of Algorithms A strategic approach, R.C.T.Lee, S.S.Tseng, R.C.Chang and T.Tsai, Mc Graw Hill.
3. Data structures and Algorithm Analysis in C++, Allen Weiss, Second edition, Pearson education.
4. Design and Analysis of algorithms, Aho, Ullman and Hopcroft, Pearson education.
5. Algorithms – Richard Johnson baugh and Marcus Schaefer, Pearson Education

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DESIGN AND ANALYSIS OF ALGORITHMS

Time : Three Hours

Max Marks : 70

PART-A

Answer any FIVE questions. Each Question carries SIX Marks

(Marks: 5 x 6 =30 Marks)

1. Explain the Time complexity and Space complexity.
2. Describe connected and biconnected components.
3. Write about Strassen's matrix multiplication.
4. Discuss Job sequencing with deadlines .
5. Explain the Binary Search algorithm.
6. Explain All pairs shortest path problem.
7. Describe graph coloring problem.
8. Describe sum of subsets problem.
9. Explain the non deterministic algorithms.
10. Explain FIFO Branch and Bound solution.

PART-B

Answer any FOUR Questions. Each Question carries TEN Marks

(Marks:4 x

10 =40 Marks)

11. Explain about Asymptotic Notations.
12. Write about disjoint set operations.
13. Explain Quicksort algorithm with an example.
14. Write about 0/1 knapsack problem.
15. Describe Travelling sales person problem.
16. Write about n-queen problem.
17. Explain NP-Hard and NP-Complete problems.
18. Explain Branch and Bound general methods and applications

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MCA IV SEM

Paper 2: SYSTEMS PROGRAMMING

UNIT – I:

Background – Introduction, System Software and Machine Architecture, The Simplified Instructional Computer, Traditional (CISC) Machines, RISC Machines

Assemblers: Basic Assembler Functions, Machine – Dependent Assembler Features, Machine – Independent Assembler Features, Assembler Design Options, Implementation Examples

UNIT – II:

Loaders and Linkers – Basic Loader Functions, Machine – Dependent Loader Features, Machine – Independent Loader Features, Loader Design Options, Implementation Examples

UNIT – III:

Micro Processors – Basic Macro Processor Functions, Machine – Independent Macro Processor Features, Macro Processor Design Options, Implementation Examples

UNIT – IV:

Compilers - Basic Compiler Functions, Machine – Dependent Compiler Features, Machine – Independent Compiler Features, Compiler Design Options, Implementation Examples.

TEXT BOOK:

1. System Software An Introduction to System Programming by Leland L. Beck and D. Manjula, 3rd Edition

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MCA IV SEM
SYSTEMS PROGRAMMING
Model paper

Time : 3 Hours

Max Marks : 70

SECTION- A

Answer any **five** questions
Each question carries **6** marks.
(Marks: 5 x 6 =30 Marks)

1. Explain SIC architecture
2. Discuss the basic tasks an assembler must perform.
3. Explain the loader functions.
4. What is virtual memory
5. Explain the advantages of an assembler.
6. Discuss an absolute loader
7. Define Base register, index register and how they are useful in programming?
8. What is machine dependent?
9. Explain basic compiler functions
10. Explain basic machine dependent compiler features

SECTION- B

Answer any **Four** Questions
(Marks:4 x 10 =40 Marks)
Each question carries **10** marks

11. Explain multi pass assembler
12. Discuss independent assembler features and implementation of an assembler with an example
13. Explain the various types of loader schemes
14. Write machine dependent loader options.
15. Explain machine dependent and independent compiler features
16. Define macro? Explain about machine independent macro processor
17. Explain compiler implementation examples
18. Explain compiler design options

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Paper 3: WEB PROGRAMMING

UNIT – I Introduction to Internet - history of Internet – Microsoft Internet Explorer 6 Features – Introduction to XHTML Part I and Part II (Chapters 1,2,4,5)

UNIT – II JavaScript : Introduction to Scripting – Control Structures I and Control Structures II Functions (Chapters 7 to 10)

UNIT – III JavaScript : Arrays – Objects – Dynamic HTML: Object Model and Collections – Event Model (Chapter 11 to 14)

UNIT – IV Dynamic HTML : Filters and Transitions- Data Binding with Tabular Data Control Extensible Markup Language (XML)-Web Servers (IIS, and Apache) (Chapters 15,16,20,21)

TEXT BOOKS:

1. Deitel, Deitel and Goldberg Internet & World Wide Web how to Program” by, 3rd Edn. Pearson Education.
2. Ivan Barossa, Webenabled Commercial Application Development in Java 2.0 BPB.

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Paper3 : WEB PROGRAMMING

Time : Three Hours

Max Marks : 70

PART-A

**Answer any FIVE questions. Each Question carries SIX Marks
(Marks: 5 x 6 =30 Marks)**

1. Explain the history of Internet.
2. Write a short note on Internet Explorer 6.
3. Write a short note on XHTML
4. Explain the features of Java Script.
5. Write a short note on SSI, SMTP,FTP.
6. Write a short note on Web Servers.
7. Write a short note on Control Structures of Java Script.
8. What is java script function?
9. Write a short note filters ,flip,mask, chroma,gray.
10. Write a short note XML with an example.

PART-B

**Answer any FOUR Questions. Each Question carries TEN Marks
(Marks:4 x 10 =40)**

11. a) Discuss about the capabilities and features of Internet. Also write the applications of Internet.
b) Compare and Contrast Internet Explorer and Netscape Navigator.
12. a) Discuss the importance of XHTML.
b) Narrate the procedure of crating XHTML Form.
13. List and explain the syntax of Control Structures-I of Java Script
14. List and explain the syntax of Control Structure-II of Java \script.
15. Compare and contrast the difference between HTML and DHTML
16. Describe the math object ,string and character processing capabilities in java script
17. Describe the merits of Apache web server and web server
18. Explain data binding with table data control

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Paper 4: USER INTERFACE DESIGN

Unit – I Human factors of interactive software : Goals of system engineering and user-interface design, motivations for human factors in design, goals for our Profession, Accommodation of Human diversity in user Interface. **Theories, principles, and guidelines** – High – Level theories, principle 1, 2 and 3, guide lines for data display and data entry, Balance of automation and human control. **Managing design processes** – The Three pillars of design ,Development methodologies, ethnographic observation, participating design, scenario development, social impact and legal issues. **Expert reviews, usability testing, surveys and containing assessments** – Expert reviews, usability testing and laboratories, surveys ,acceptance tests, evaluation during active use, scenario development ,and controlled psychologically oriented experiments.

Unit – II : Software tools – Specification methods, Interface building tools and evaluation and critiquing tools, **Direct manipulation and virtual environments** – examples, explanations, programming, visual thinking and icons, Home automation, remote direct manipulation, virtual environments, **Menu selection, form fill in and dialog boxes** – Task-related organizations, item presentation sequence, response time and display rate, fast movement through menus, menu layout, form fill in, and dialog boxes. **Command and natural languages** – Functionality to Support users tasks, command – organization strategies, the benefits of structure, naming and abbreviations, Natural language in computing.

Unit – III: Interaction Devices – Keyboards and function Keys, pointing devices, speech recognition, digitization and generation, Image and video displays, printers. **Response time and display rate** – Theoretical foundations, expectations and attitudes, user productivity. **Presentation styles: Balancing function and fashion** – error messages, Non anthropomorphic design, display design, color. **Printed manuals, Online Help and tutorials** – Reading from paper versus from displays, preparation of printed manuals, preparation of online facilities.

Unit – IV: Multiple Window strategies – Individual Window design, multiple window design, coordination by tightly-coupled windows. Image browsing and tightly-coupled windows, Personal role management and elastic windows. **Computer supported cooperative work** – goals of cooperation, Asynchronous Interactions: Different time and place, Synchronous Distributed: Different place, same time, face to face : place, same time, Applying CSCW to Educations. **Information search and visualization** – Database query and phrase search in textual documents, multimedia document searches, information visualization, Advanced filtering. **Hyper Media and the World wide web (www)**: Genres and goals and designers, users and their tasks, object-action interface model for web site design.

TEXT BOOK:

1. Ben Shneiderman, Designing the user Interface, strategies for effective human-computer Introduction, Third Edition, Pearson Education, 2004.(For Units I, II, III and IV)
2. Chris H Pappas and William H Murray, III, The Complete Reference Visual C++ 6, Tata McGraw-Hill Edition (For Unit V)

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Paper 5 : USER INTERFACE DESIGN

Time : 3 Hours

Max Marks : 70

PART-A

Answer any FIVE questions. Each Question carries SIX Marks

(Marks: 5

x 6 =30 Marks)

1. What are the goals of system engineering?
2. Discuss about Motivations for Human Factors in Design?
3. What are the guidelines for data display?
4. What is scenario development?
5. What are the user interface building tools?
6. Define a dialog box?
7. Explain about Interaction devices?
8. Explain response time and display rate?
9. What is WWW?
10. Explain about Single and Multiple window Designs?

PART-B

Answer any FOUR Questions.

Each Question carries TEN Marks

(4 x 10 =40 Marks)

11. a) Explain the accommodation of human diversity in user interface.
b) Explain eight golden rules for user interface design
12. a) Explain Three pillars of user interface design
b) What are expert reviews and explain evaluation during active use?
13. a) Explain specification method in software tools
b) What are the advantages over command line versus display editors versus word processors?
14. Explain the following
a) Task related organization
b) Command organization strategies
15. Explain balancing function and fashion in user interface
16. a) Explain the preparation of printed manuals and online facilities
b) Explain about expectations and attitude
17. Explain OAI model for website design
18. Explain about Hyper Media and WWW?

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MASTER OF COMPUTER APPLICATION
MCA IV SEM**

Paper 5: DATA MINING & DATA WAREHOUSING

UNIT - I:

Data Mining & OLAP Technology for Data Mining: What is Data Mining, Data Mining Functionalities, classification, Data Mining Task primitives, Integrating a Data Mining System, Major issues in Data Mining, and Data Cleaning, Data Integration and transformation, Data reduction, Data Discrimination and concept Hierarchy Generation?

UNIT - II:

Data Warehousing & OLAP Technology: . What is Data Warehouse, Multidimensional Data Model, Data Warehouse Architecture, Data Warehouse implementation, From Data Warehouse to data mining, Attribute – oriented Induction.

UNIT - III:

Data Mining Patterns Association and Correlations: Basic Concepts of frequent patterns, Efficient and scalable frequent item set mining methods, mining various kinds of association rules, **Classification and Prediction:** what is classification and Prediction, Classification by Decision Tree Induction, Bayesian Classification, classification by Back propagation, Constraint based association mining.

UNIT – IV:

Cluster Analysis Methods: What is Cluster analysis, types, Types of data in cluster analysis, Partitioning methods, Hierarchical methods, Density Based methods, Grid Based methods, Outlier analysis. Mining Time Series data, Text mining, Multimedia data mining.

TEXT BOOK:

1. Data Mining Concepts & Techniques By Jiawei Han, Micheline & Kamber (2nd Edition) Harcourt India (Elsevier Publishing Company)

REFERENCE BOOKS:

1. Data Mining Introductory and advanced topics –MARGARET H DUNHAM, PEARSON EDUCATION
2. Data Mining Techniques – ARUN K PUJARI, University Press.

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MCA IV SEM

DATA WAREHOUSING AND DATA MINING

Time : 3 Hours

Max Marks : 70

PART-A

Answer any FIVE questions. Each Question carries SIX Marks
(Marks: 5 x 6 =30 Marks)

1. What is KDD process.
2. What is Data Warehouse.
3. Describe concept hierarchy.
4. Brief on Data Mining Primitives.
5. What is Data Generalization.
6. Describe the Analysis of Attribute Relevance.
7. What are partitioning methods?
8. What is Outlier Analysis?
9. Explain types of data in cluster analysis?
10. What is descriptive mining of complex data objects

PART-B

Answer any FOUR Questions. Each Question carries TEN Marks
(Marks:4 x 10 =40 Marks)

11. What are Data Mining Functionalities?
12. What are data preprocessing Steps. Explain about data cleaning?
13. Write difference between Operational Databases and Data Warehouse. Describe three tier Data Warehouse Architecture.
14. Explain About Multidimensional Model?
15. Explain mining single dimensional Boolean Association rules from transactional databases with illustration.
16. Explain Bayesian Classification.
17. What is cluster analysis? Briefly discuss about types of data in cluster analysis.
18. Explain Text mining.

**MASTER OF COMPUTER APPLICATIONS
FIFTH SEMESTER
.NET TECHNOLOGIES**

UNIT - I:

FUNDAMENTALS OF VISUAL BASIC: Exception handling, windows forms, Control Classes, Different Types of Boxes, Labels, Buttons, Panels. (Chapters 1 to 7)

UNIT - II:

WINDOWS FORMS: Different types of Bars, Menus, Views.

OBJECT - ORIENTED PROGRAMMING: Classes and objects constructors and destructors, inheritance, modifiers, Interfaces, Polymorphism, Vate Binding, Graphics handling and File handling. (Chapters 8 to 13)

UNIT - III:

WEB FORMS: Working with web forms, Web forms and HTML, The Web control class, Web Forms and Boxes, Web Forms and Buttons, Validation Controls, Ad Rotators, Web Forms and HTML controls. (Chapters 14 to 19)

UNIT - IV:

DATA ACCESS WITH ADO.NET : Accessing data with the server explorer, Data adapters and Data sets, Binding Controls to databases, Handling databases in code, Database access in Web Applications. Creating user Controls, Web user Controls, and Multithreading creating Windows services, Web Services and Deploying applications. (Chapters 30 to 25)

TEXT BOOK:

1. VB.NET PROGRAMMING (BLACK BOOK) BY STEVEN HOLZNER (Dreamech-3003)

REFERENCE BOOKS:

1. VB.NET PROGRAMMING BY T. GADDIS (Dreamech)
2. Microsoft Visual Basic. Net step by step By Halvosrson (PHI)

**D.R.W. COLLEGE (AUTONOMOUS) :: GUDUR
MASTER OF COMPUTER APPLICATION
MCA V SEM**

.NET TECHNOLOGIES

Time : Three Hours

Max Marks : 70

PART-A

**Answer any FIVE questions. Each Question carries SIX Marks
(Marks: 5 x 6 =30 Marks)**

1. Explain about Different types of Boxes?
2. Write about panels?
3. Explain about Different types of Bars?
4. Explain about Polymorphism?
5. Explain about web forms and Buttons?
6. Write about Web forms and HTML Controls?
7. Explain about Database access in web applications?
8. Write about Data adaptors and datasets?
9. Discuss about accessing data with server explorer
10. How to create User controls and web User Controls

PART-B

**Answer any FOUR Questions. Each Question carries TEN Marks (Marks:4 x
10 =40 Marks)**

11. Explain about Exception Handling?
12. Explain about Control classes?
13. Write about Constructors and Deconstructors?
14. Write about Inheritance?
15. Explain about Validation controls?
16. Explain about Ad Rotators?
17. Write about Multithreading Creating windows services ?
18. Explain about Accessing data with the sever explorer?

**MASTER OF COMPUTER APPLICATIONS
FIFTH SEMESTER
CRYPTOGRAPHY & NETWORK SECURITY**

UNIT - I:

INTRODUCTION:-Security Attacks, Security Services ,Security Mechanisms.

BLOCK CIPHERS AND DATA ENCRYPTION STANDARD:-Traditional Block Cipher Structure, Data Encryption Standard, Block Cipher Design Principles.

UNIT-II:

PUBLIC-KEY CRYPTOGRAPHY:-Principles of Public-Key Cryptosystems, The RSA Algorithms, Diffie-Hellman Key Exchange ,Elliptic Curve Cryptography.

INTRODUCTION TO NUMBER THEORY:-Prime and Relatively Prime Numbers, Fermat's and Euler's Theorem, Euclid's Algorithm. The Chinese Remainder Theorem, Discrete Logarithms, Hash functions, Security of Hash functions and MACs.

UNIT-III:

E-MAIL SECURITY:-Complete Email System, Email Security, Pretty Good Privacy(PGP),MIME,S/MIME.

WIRELESS SECURITY:-Wireless Security ,Mobile Device Security.

UNIT-IV:

IP SECURITY:-IP Security Overview, IP Security Architecture ,Encapsulating security Payload.

TRANSPORT LEVEL SECURITY:-Web Security Considerations ,Transport Layer Security ,HTTPs ,Secure Shell(SSH).

TEXT BOOK:

1. Cryptography And Network Security principles and Practice FOURTH Edition By Willam Stallings (Pearson Asia)

REFERENCE BOOKS:

1. Davies & Price : Security For Computer Networks - Wiley (1984)
2. Network Security and Cryptography, N. Sridhar & R.Siva Ranjani, HI – Tech Publishers (2005)

MASTER OF COMPUTER APPLICATIONS
Third Semester
CRYPTOGRAPHY & NETWORK SECURITY

Model Paper

(With effect from the academic year 2018-2019)

Time : Three Hours

Max Marks : 70

PART-A

Answer any FIVE questions. Each Question carries SIX Marks
(Marks: 5 x 6 =30 Marks)

1. Explain about Security Attacks
2. Explain about block cipher Design Principles
3. write about Diffie-Hellman Key Exchange
4. Explain about Prime Numbers
5. Explain about Email Formats
6. Explain about Mobile Device Security
7. Explain IP Security
8. Write about HTTPS
9. Write about Email Security
10. Explain about SSH

PART-B

Answer any FOUR Questions. Each Question carries TEN Marks
(Marks:4 x 10 =40 Marks)

11. Explain about Network Security Services
12. Explain about Traditional Block Cipher Structure
13. Write about the principles of Public- Key Crypto Systems
14. Explain about Euclidian Algorithm
15. Explain about S/MIME
16. Explain about Wireless Security
17. Explain Encapsulating Security Payload
18. Explain about Transport Layer Security

MASTER OF COMPUTER APPLICATIONS
FIFTH SEMESTER
ADVANCED DATABASE MANAGEMENT SYSTEMS

UNIT – I:

ENHANCED ENTITY-RELATIONSHIP AND OBJECT MODELING: Subclasses, Super classes, and Inheritance, Specialization and Generalization, Constraints and Characteristics of Specialization and Generalization, Modeling of UNION Types Using Categories, An Example UNIVERSITY ERR Schema and Formal Definitions for the ERR Model, Conceptual Object Modeling Using UML Class Diagrams, Relationship Types of Degree Higher Than Two, Data Abstraction and Knowledge Representation Concepts Relational Database Design Using ER-to-Relational Mapping, Mapping ERR Model Concepts to Relations

UNIT – II:

CONCEPTS FOR OBJECT-ORIENTED DATABASES: Overview of Object-Oriented Concepts, Object Identity, Object Structure, and Type Constructors, Encapsulation of Operations, Methods, and Persistence, Type Hierarchies and Inheritance. Overview of the Object Model of ODMG, The Object Definition Language. Object-Relational Features of Oracle, An Overview of SQL3, Implementation and Related Issues for Extended Type Systems, The Nested Relational Data Model.

UNIT – III:

STORAGE AND INDEXING: OVERVIEW OF STORAGE AND INDEXING - Data on External Storage, File organizations and Indexing, Index Data Structures, Comparison of File Organizations.

STORING DATA: DISKS AND FILES - The Memory Hierarchy, Redundant Arrays of Independent Disks, Disk Space Management, Buffer Manager, Files of Records, Page Formats, Record Formats.

UNIT – IV:

TREE - HASH INDEXING: TREE - STRUCTURED INDEXING - Intuition For Tree Indexes, Indexed Sequential Access Method (ISAM), B+ Trees: A Dynamic Index Structure, Search, Insert, Delete, Duplicates, B+ Trees in Practice.

HASH-BASED INDEXING - Static Hashing, Extendible Hashing, Linear Hashing, Extendible vs. Linear Hashing.

TEXT BOOKS

1. Fundamentals of DataBase Management Systems by Navate & Elmasri (IV Edition)
2. DataBase Management System (III Edition) by Raghu Ramakrishna and J.Gehrke

MASTER OF COMPUTER APPLICATIONS
Fifth Semester
ADVANCED DATABASE MANAGEMENT SYSTEM
Model Paper

(With effect from the academic year 2018-2019)

Time : Three Hours

Max Marks : 70

PART-A

Answer any FIVE questions. Each Question carries SIX Marks
(Marks: 5 x 6 =30 Marks)

1. Write about specialization and generalization
2. Draw the diagram of an EER conceptual schema for a UNIVERSITY database schema
3. Write about complex type structures for objects and literals
4. Explain overview of SQL-3
5. Explain object identifiers using reference types
6. Write about files of records
7. Explain about Redundant arrays of Independent Disks (RAID)
8. write data on external storage
9. Write about static hashing
10. Explain about Index Sequential Access method

PART-B

Answer any FOUR Questions. Each Question carries TEN Marks
(Marks:4 x 10 =40 Marks)

- 11) Explain Relational Database design using ER-to-Relational mapping
- 12) Explain mapping ERR model concepts to relation
- 13) a) Explain overview of the objects model of ODMG
- 14) Explain a) Object Identity, Object structure, and type constructors
b) Encapsulation of operations
- 15) Write about file organization and indexing
- 16) Write about Buffer manager in DBMS
- 17) Explain about B+tree and dynamic index structure
- 18) Explain Extendible hashing

MASTER OF COMPUTER APPLICATIONS
FIFTH SEMESTER
CLOUD COMPUTING

UNIT – I:

INTRODUCTION TO CLOUD COMPUTING – Introduction, Characteristics of Cloud Computing, Cloud Models, Cloud Services Examples, Cloud – based Services & Applications

CLOUD CONCEPTS & TECHNOLOGIES – Virtualization, Load Balancing, Scalability & Elasticity, Deployment, Replication, Monitoring, Software Defined Networking, Network Function Virtualization, MapReduce, Identity and Access Management, Service Level Agreements, Billing

UNIT – II:

CLOUD SERVICES & PLATFORMS - Compute Services, Storage Services, Database Services, Application Services, Content Delivery Services, Analytics Services, Deployment & Management Services, Identity & Access Management Services, Open Source Private Cloud Software

DEVELOPING FOR CLOUD – Cloud Application Design, Reference Architectures for cloud Applications, Cloud Application Design Methodologies, Data Storage Approaches

UNIT – III:

BIG DATA ANALYTICS – Introduction, Clustering Big Data, Classification of Big Data

UNIT – IV:

MULTIMEDIA CLOUD – Introduction, Case Study: Live Video Streaming App, Streaming Protocols, Case Study: Video Transcoding App

CLOUD APPLICATION BENCHMARKING & TUNING – Introduction, Workload characteristics, Application Performance Metrics, Design Considerations for a Benchmarking Methodology, Benchmarking Tools, Deployment Prototyping, Load Testing & Bottleneck Detection Case Study, Hadoop Benchmarking Case Study

CLOUD SECURITY – Introduction, CSA Cloud Security Architecture, Authentication, Authorization, Identity & Access Management, Data Security, Key Management, Auditing

TEXT BOOK:

1. Cloud Computing A Hands-on Approach by Arshdeep Bahga, Vijay Madiseti

MASTER OF COMPUTER APPLICATIONS
Fifth Semester
CLOUD COMPUTING
Model Paper

(With effect from the academic year 2018-2019)

Time : Three Hours

Max Marks : 70

PART-A

Answer any FIVE questions. Each Question carries SIX Marks
(Marks: 5 x 6 =30 Marks)

- 1 Explain characteristics of cloud computing.
2. Discuss identify and access management.
3. What is service level agreement and billing.
4. Explain network function virtualization.
5. What is cloud storage service.
6. Write deployment & management service.
7. Discuss content delivery service.
8. Explain streaming protocols.
9. What is authentication and authorization.
10. Discuss about work load characteristics.

PART-B

Answer any FOUR Questions. Each Question carries TEN Marks
(Marks:4 x 10 =40 Marks)

- 11) Explain cloud models.
- 12) a) Explain virtualization.
b) What is load balancing.
- 13) Write about compute the cloud service.
- 14) Discuss about cloud application design methodologies.
- 15) Explain clustering of big data.
- 16) What about classification of big data.
- 17) Write about Design consideration for a BENCHMARKING methodologies.
- 18) Explain cloud security architecture.

MASTER OF COMPUTER APPLICATIONS
FIFTH SEMESTER
INTERNET OF THINGS

UNIT - I:

INTRODUCTION TO INTERNET OF THINGS –Definition and Characteristics of IoT, Physical Design of IoT – IoT Protocols, IoT Communication Models, IoT enabled Technologies – Wireless Sensor Networks, Cloud Computing, Big data analytics, Communication protocols, Embedded Systems, IoT Levels and Templates Domain Specific IoTs – Home, City, Environment, Energy, Retail, Logistics, Agriculture, Industry, Health and Lifestyle

UNIT - II:

IOT AND M2M – Software defined networks, network function virtualization, difference between SDN and NFV for IoT Basics of IoT System Management with NETCOZF, YANGNETCONF, NETOPEER

UNIT - III:

INTRODUCTION TO PYTHON - Language features of Python, Data types, data structures, Control of flow, functions, modules, packaging, file handling, data/time operations, classes, Exception handling Python packages - JSON, XML, HTTPLib, URLLib, SMTPLib

UNIT - IV:

IOT PHYSICAL DEVICES AND ENDPOINTS – IOT Devices, Basic Building blocks of IOT Devices, Exemplary Device: Raspberry Pi, Programming Raspberry pi with python: Controlling LED with Raspberry pi, Interfacing an LED and Switch with Raspberry PI.

IOT PHYSICAL SERVERS AND CLOUD OFFERINGS – Introduction to Cloud Storage models and communication APIs ,Python web application framework

TEXT BOOKS:

1. Internet of Things - A Hands-on Approach, Arshdeep Bahga and Vijay Madiseti, Universities Press, 2015, ISBN: 9788173719547
2. Getting Started with Raspberry Pi, Matt Richardson & Shawn Wallace, O'Reilly (SPD), 2014, ISBN: 9789350239

**MASTER OF COMPUTER APPLICATIONS
FIFTH SEMESTER
INTERNET OF THINGS**

Model Paper

(With effect from the academic year 2018-2019)

Time : Three Hours

Max Marks : 70

PART-A

**Answer any FIVE questions. Each Question carries SIX Marks
(Marks: 5 x 6 =30 Marks)**

1. Explain definition and characteristics of IOT
2. Explain the Enabling Technologies in IOT
3. Explain the Domain Specific IOT's
4. Write about Software Defined Networks
5. Explain about Network Function Virtuallization
6. Write about the Features of Python
7. Explain about the Data Types in Python
8. Describe the Classes in Python
9. How to Interfacing an LED and Switch with Raspberry PI.
10. Python web application framework

PART-B

**Answer any FOUR Questions. Each Question carries TEN Marks
(Marks:4 x 10 =40 Marks)**

11. Describe the IOT levels
12. Explain IOT Protocols
13. Explain the IOT System Management with NETCONF
14. Explain the IOT System Management with NETOPEER
15. Describe the Packages JSON, XML ,HTTPLib in Python
16. Explain a) functions,
b) file handling
c) data/time operations
17. Explain about Raspberry Pi, Programming Raspberry pi with python
18. Explain about Cloud Storage models and communication APIs

