NAGARJUNA GOVERNMENT COLLEGE,

AUTONOMOUS:NALGONDA

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(Re Accredited by NAAC with "A" Grade)

# DEPARTMENT OF COMPUTER SCIENCE

## BOARD OF STUDIES MEETING

# 2018-19

# NAGARJUNA GOVERNMENT COLLEGE: NALGONDA

**( AUTONOMOUS )**

**( Re-Accredited with NAAC "A " GRADE )**

Date 29-09-2018

To
The Principal
N.G.College
Nalgonda.

Sir,

Sub:- Grant of Autonomous Status - Constitution of **BOARD OF STUDIES** in B.Sc Computer Science Department – Request for Approval –Reg.

Ref:-

1) No.F.22-1/2007(AC) Dt: 3rd April 2007
2) OU Lr.Mr.69/H/2007/Acad.Dt.12-06-2007.
3) GO RT.No.467 HE.(CE-1) Dept. Dt.29-06-2007.
4) MGU Lr.191/MGU/NLG/2015-16, Dt.28-08-2015.

***

With Reference to the Subject Cited above, I am submitting the List of members of Board of Studies for Academic Years 2017-18 for your Approval.

| S.No. | NAME | DESIGNATION |
|---|---|---|
| 1 | **Sri K.Nagi Reddy** Reddy<br>In-Charge Dept of Computer Science<br>N.G. College.<br>Nalgonda. | **CHAIRPERSON** |
| 2 | **Prof.Dr.R.REKHA,**<br>Chairman Board of Studies,<br>Dept of Computer Science<br>Mahatma Gandhi University<br>Nalgonda. | **UNIVERSITY NOMINEE** |
| 3 | **Sri . K.Naga Raju**<br>Govt.Degree Women's College.<br>Nalgonda. | **SUBJECT EXPERT** |
| 4 | **Sri. Nagesh Kumar**<br>Neelagiri Degree College,<br>Nalgonda. | **SUBJECT EXPERT** |
| 5 | **Sri. SP.VENKAT RAMANA**<br>Contract Faculty Computer Science,<br>N.G.College, Nalgonda. | **MEMBER** |
| 6 | **Sri . Y.Rukesh Kumar**<br>Guest Faculty<br>N.G.College, Nalgonda | **MEMBER** |

Submitted By

Chairman BOS
Dept.of Computer Science

Proposal Approved

Principal /Chair Person Acad Council

**NAGARJUNA GOVERNMENT COLLEGE, NALGONDA**
**(Autonomous) Reaccredited with "A" Grade by NAAC**
**(Affiliated to Mahatma Gandhi University)**
**DEPARTMENT OF COMPUTER SCIENCE**
**BOARD OF STUDIES MEETING 2018-19**
**RESOLUTI ONS**

The members of Board of studies in Computer Science Department, N.G. College, Nalgonda met under the chairmanship of Sri **K.Nagi Reddy** on 29- 09 -2018 and passed the following Resolutions.

**AGENDA :**

1. To consider and approve the syllabus for B.Sc I,II,III years(I, II, III, IV,V &VI Semesters) during 2018-19.
2. To consider and approve the introduction of Internal Assessment for the students admitted into I,II & III years degree course during 2018-19.
3. To consider and approve the model question paper for B.Sc I,II,&III year 2018-19
4. To consider and approve the list of examiners for paper setting, evaluation for B.Sc. I,II, & III year (I,II,III,IV,V & VI Semester) during 2018-19.
5. Any other related academic matters.

**RESOLUTIONS:**

1. It is resolved to approve the Syllabus and Question papers Models for the I,II,III,IV,V and VI Semester for the year 2018-19 and also in authorized the chairman of Board of Studies to nominate panel of Examiners and paper setter.
2. It is resolved to adopt each semester is of 100 marks in which 70 Marks for Theory and 30 Marks for Internal Examinations (20 Marks for written examination 5 Marks for Assignment and 5 marks for Seminar) introduce for the year 2018-19 as per the direction of CCE, Hyd.
3. It is resolved to organize class wise and year wise Class Seminar, Group Discussion and Guest Lecture.
4. Approved to conduct practical examination at the end of each semester for 1st year & 2nd year student and of sixth semesters for 3rd year students.

| SL.NO | NAME | DESIGNATION | SIGNATURES |
|---|---|---|---|
| 1 | **Sri K.Nagi reddy**<br>In-Charge Dept of Computer Science<br>N.G. College.<br>Nalgonda. | Chairman Board of Studies | CHAIRMAN Board of Studies in Computer Sc... N.G. College, NALGONDA |
| 2 | **Prof.Dr.R.REKHA,**<br>Chairman Board of Studies,<br>Dept of Computer Science<br>Mahatma Gandhi University<br>Nalgonda. | Hon'ble Member | 29/09/2018 CHAIRPERSON BOARD OF STUDIES IN COMPUTER SCIENCE AND INFORMATICS M.G. University, Yellareddygudem, Nalgonda-508 254.(T.S.) |
| 3 | **Sri K.Naga Raju**<br>Govt.Degree Women's College.<br>Nalgonda | Subject Expert | LECTURER Dept. of Computer Scien... Govt. Degree College for Wo... Ramagiri, NALGONDA. (A... |
| 4 | **Sri S.Nagesh kumar**<br>Neelagiri Degree College<br>Nalgonda. | Subject Expert | Department of Computer Science NEELAGIRI DEGREE COLLEGE. NALGONDA. |
| 5 | **Sri SP.VENKAT RAMANA**<br>Contract Faculty Computer Science,<br>N.G.College, Nalgonda. | Member | |
| 6 | **Sri Y.Rukesh Kumar**<br>(Guest Faculty)<br>N.G.College, Nalgonda | Member | |

## NAGARJUNA GOVERNMENT COLLEGE (AUTONOMOUS): NALGONDA
### (Affiliated to Mathatma Gandhi University)
### PANEL OF EXAMINERS FOR THE YEAR 2018-19

Subject: **COMPUTER SCIENCE**

| SNO | Paper | Name of the Examiners with full Addresses | Phone Numbers |
|---|---|---|---|
| 1 | I | K.Naga Raju , Lect. In Computer Science, Govt.Women's College, Ramagir, Nalgonda. | 9948226486 |
| 2 | I | CH. Naveen, MSc(Comp.Sci.) , M.Tech(C.S), SET, JAAGRUTHI DEGREE & PG COLLEGE , NO 2-2-168,Azad Road ,BHONGIR-508116. Dist.Nalgonda Telangana State. | 9948781809 |
| 3 | I | S.Nagesh UGCNET ,Lect.in Computer Science, Neelagiri Degree & P.G.College, Near Kanakaduga Temple ,Ramagiri, Nalgonda-508001 | 9177933967 |
| 4 | II | K.Naga Raju , Lect. In Computer Science, Govt.Women's College, Ramagir, Nalgonda. | 9948226486 |
| 5 | II | S.Nagesh UGCNET ,Lect.in Computer Science, Neelagiri Degree & P.G.College, Near Kanakaduga Temple ,Ramagiri, Nalgonda-508001 | 9177933967 |
| 6 | II | CH. Naveen, MSc(Comp.Sci.) , M.Tech(C.S), SET, JAAGRUTHI DEGREE & PG COLLEGE , HNO 2-2-168,Azad Road ,BHONGIR-508116. Dist.Nalgonda Telangana State. | 9948781809 |
| 7 | III | K.Naga Raju , Lect. In Computer Science, Govt.Women's College, Ramagir, Nalgonda. | 9948226486 |
| 8 | III | M.Satyanaryana, Lecturer in Computer Science, Indian Institute of Management of Commerce, 6-1-91,Adj.Telephone Bhavan, Khairatabad, Hyderabad-04 | 9866260143 |
| 9 | III | S.Nagesh UGCNET ,Lect.in Computer Science, Neelagiri Degree & P.G.College, Near Kanakaduga Temple ,Ramagiri, Nalgonda-508001 | 9177933967 |
| 10 | IV | K.Naga Raju , Lect. In Computer Science, Govt.Women's College, Ramagir, Nalgonda. | 9948226486 |
| 11 | IV | M.Satyanaryana, Lecturer in Computer Science, Indian Institute of Management of Commerce, 6-1-91,Adj.Telephone Bhavan, Khairatabad, Hyderabad-04 | 9866260143 |
| 12 | IV | Ravi Kumar Lect.in Computer Science Kakatiya Degree College,Hyderabad Road, Nalgonda-508001. | 9963801656 |
| 13 | V | M.Satyanaryana, Lecturer in Computer Science, Indian Institute of Management of Commerce, 6-1-91,Adj.Telephone Bhavan, Khairatabad, Hyderabad-04 | 9866260143 |
| 14 | V | K.Prasanth Kumar, Lecturer in Computer Science, Indian Institute of Management of Commerce, 6-1-91,Adj.Telephone Bhavan, Khairatabad, Hyderabad-04 | 9908615205 |
| 15 | V | S.Nagesh UGCNET ,Lect.in Computer Science, Neelagiri Degree & P.G.College, Near Kanakaduga Temple ,Ramagiri, Nalgonda-508001 | 9177933967 |
| 16 | VI | K.Naga Raju , Lect. In Computer Science, Govt.Women's College, Ramagir, Nalgonda. | 9948226486 |
| 17 | VI | M.Vijay, Computer Lecturer, Indian Institute of Management of Commerce, 6-1-91,Adj.Telephone Bhavan, Khairatabad, Hyderabad-04 | 8143567352 |
| 18 | VI | S.Nagesh UGCNET ,Lect.in Computer Science, Neelagiri Degree & P.G.College, Near Kanakaduga Temple ,Ramagiri, Nalgonda-508001 | 9177933967 |
| 19 | VII | CH. Naveen, MSc(Comp.Sci.) , M.Tech(C.S), SET, JAAGRUTHI DEGREE & PG COLLEGE , HNO 2-2-168,Azad Road ,BHONGIR-508116. Dist.Nalgonda Telangana State. | 9948781809 |
| 20 | VII | M.Satyanaryana, Lecturer in Computer Science, Indian Institute of Management of Commerce, 6-1-91,Adj.Telephone Bhavan, Khairatabad, Hyderabad-04 | 9866260143 |
| 21 | VII | S.Nagesh UGCNET ,Lect.in Computer Science, Neelagiri Degree & P.G.College, Near Kanakaduga Temple ,Ramagiri, Nalgonda-508001 | 9177933967 |
| 22 | VIII | K.Naga Raju , Lect. In Computer Science, Govt.Women's College, Ramagir, Nalgonda. | 9948226486 |
| 23 | VIII | S.Nagesh UGCNET ,Lect.in Computer Science, Neelagiri Degree & P.G.College, Near Kanakaduga Temple ,Ramagiri, Nalgonda-508001 | 9177933967 |
| 24 | VIII | M.Vijay, Computer Lecturer, Indian Institute of Management of Commerce, 6-1-91,Adj.Telephone Bhavan, Khairatabad, Hyderabad-04 | 8143567352 |

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**NAGARJUNA GOVERNMENT COLLEGE, NALGONDA**
**DEPARTMENT OF COMPUTER SCIENCE**
**ALLOCATION OF CREDITS AT SUBJECT LEVEL**

**COURSE : SCIENCE** **2018-19** **SUBJECT: COMPUTER SCIENCE**

| S. No | Semester | Module(Paper) | Hours per week | Max. Marks | No. of credits |
|---|---|---|---|---|---|
| 1 | I (CORE) | Programme in C | 4 | 100 | 3 |
| | Practicals | C programming Lab | 3 | 50 | 2 |
| 2 | II (CORE) | Programming in C++ | 4 | 100 | 3 |
| | Practicals | Programming in C++ Lab | 3 | 50 | 2 |
| 3 | III (CORE) | Data Structures in C++ | 4 | 100 | 3 |
| | Practicals | Data Structures C++ Lab | 3 | 50 | 2 |
| 4 | IV (CORE) | Database Management Systems | 4 | 100 | 3 |
| | Practicals | Database Management Systems Lab | 3 | 50 | 2 |
| 5 | V (CORE) | Programming in JAVA | 4 | 100 | 3 |
| | Practicals | Programming in JAVA Lab | 3 | 50 | 2 |
| 6 | V (CORE) Elective (Advanced) | Operating System | 4 | 100 | 3 |
| | Practicals | Operating System Lab | 3 | 50 | 2 |
| 7 | VI Core | Computer Networks | 3 | 100 | 2 |
| | Practicals | Network Lab | 3 | 50 | 2 |
| 8 | VI (CORE) Elective (Advanced) | Web Technolgies | 3 | 100 | 2 |
| | Practicals | Web Technolgies Lab | 3 | 50 | 2 |
| 9 | Project Work | Self Study &Skill Based | | Grade | |

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# Department of Computer Science

## Nagarjuna Government College, Nalgonda

Name of the Module: C Programming
Nature of the Module: Core
Mode of Learning: Regular
No. of Hours: 04
Credits: 03
Semester: I
Subject: Computer Science
2018-19
Total Hours: 60

### CURRICULAR PLAN

Semester: I

| S. No | Month and Week | No. of Hours | Topic | Curricular Activity | Co-curricular Activity | Remarks |
|---|---|---|---|---|---|---|
| 1 | June II | 4 | Computer Fundamentals,classification of computers,Memory | Teaching | | |
| 2 | June III | 4 | Programm Fundamentals,Classifying of Programming Languages,Compiler | Teaching | Assignment/Seminar /Question and Answers | |
| 3 | June IV | 4 | Algorithm,Structred Programming Concept | Teaching | | |
| 4 | July I | 4 | Basic of C,Parts of Simple C program,C Tokens,Datatypes | Teaching | | |
| 5 | July II | 4 | Input-Output Functions,Escape Sequences | Teaching | Assignment/Seminar /Question and Answers | |
| 6 | July III | 4 | Control Statements,If,If-Else,Nested If,Conditional Operators | Teaching | | |
| 7 | July IV | 4 | Iterative Statements,While,Do-While,For loop | Teaching | Quiz | |
| 8 | Aug I | 4 | Control Statements,Goto,Break,Continue | Teaching | Assignment/Seminar | |
| 9 | Aug II | 4 | Functions ,Call-by-value,Call-by-reference,passing Arrays to functions | Teaching | Seminar | |
| 10 | Aug III | 4 | Storage Classes,Inline functions,Recursion | Teaching | | |
| 11 | Aug IV | 4 | Pointers,Introduction,Address of operarators,Uses of pointers | Teaching | Group Discussion | |
| 12 | Sep I | 4 | Pointers and strings ,Pointers to pointers,Arrays of pointers | Teaching | | |
| 13 | Sep II | 4 | User defined Datatypes,declaring structure and its members | Teaching | Student Carrier Counselling | |
| 14 | Sep III | 4 | StructuresVs unions,Enumeration types,Files,Other file management functions | Teaching | Assignment/Seminar /Quiz | |
| 15 | Sep IV | 4 | Revision of the Syllabus | Teaching | | |

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# Department of Computer Science
# Nagarjuna Government College, Nalgonda

**Name of the Module:** C++ Programming
**Semester:** II
Nature of the Module: Core
**Subject:** Computer Science
**Mode of Learning:** Regular
2018-19
**No. of Hours:** 04
**Credits:** 03
**Total Hours:** 60

## CURRICULAR PLAN

Semester: II

| | | | | | | |
|---|---|---|---|---|---|---|
| 2 | Nov II | 4 | c++ Introduction,Applications,C++ Tokens,Datatypes | Teaching & Practical (1) | Assignment/Seminar /Question and Answers | |
| 3 | Nov III | 4 | Operators,Expressions, Contorl structures | Teaching & Practical (1) | | |
| 4 | Nov IV | 4 | Arrays,Strings,pointers,Searchin and sorting Arrays | Teaching & Practical (1) | | |
| 5 | Dec I | 4 | Object Oriented Programming.Benefits of OOPs Languages,and OOP Applications | Teaching & Practical (1) | Assignment/Seminar /Question and Answers | |
| 6 | Dec II | 4 | Classes,Introduction,Defining an Instance of a Class,Inline Member Functions | Teaching & Practical (1) | | |
| 7 | Dec III | 4 | Constructors,Destructors,Overloading Constructors, | Teaching & Practical (1) | Quiz | |
| 8 | Dec IV | 4 | Inheritance: Introduction, Protected Members and Class Access, Base Class Access Specification | Teaching & Practical (1) | Assignment/Seminar | |
| 9 | Jan I | 4 | Inline Member Functions, Constructors, Passing Arguments to Constructors, Destructors, Overloading Constructors | Teaching & Practical (1) | Seminar | |
| 10 | Jan II | 4 | Member-wise Assignment, Copy Constructors, Operator Overloading, Object Conversion, Aggregation. | Teaching & Practical (1) | | |
| 11 | Jan III | 4 | Inheritance: Introduction, Protected Members and Class Access, Base Class Access Specification, Constructor | Teaching & Practical (1) | Group Discussion | |
| 12 | Jan IV | 4 | C++ Streams: Stream Classes, Unformatted I/O Operations, Formatted I/O Operations. | Teaching & Practical (1) | | |
| 13 | Feb I | 4 | Exceptions: Introduction, Throwing an Exception, Handling an Exception, Object-Oriented Exception Handling | Teaching & Practical (1) | Student Carrier Counselling | |
| 14 | Feb II | 4 | Templates:Function Templates–Introduction, Function Templates with Multiple Type | Teaching & Practical (1) | Assignment/Seminar /Quiz | |
| 15 | Feb III | 4 | Revision of the Syllabus | Teaching & Practical (1) | | |
| 16 | Feb IV | 4 | Remedial Classes | Teaching & Practical (1) | | |

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# Department of Computer Science

## Nagarjuna Government College, Nalgonda

Name of the Module: Data Structure **Semester:** III

Nature of the Module: **Core**

**Subject:** Computer Science

**Mode of Learning:** Regular 2018-19

**No. of Hours:** 04 **Credits:** 03 **Total Hours:** 60

### CURRICULAR PLAN

| S. No | Month and Week | No. of Hours | Topic | Curricular Activity | Co-curricular Activity | Remarks |
|---|---|---|---|---|---|---|
| 1 | June II | 4 | Fundamental Concepts: Introduction to Data Structures, Types of Data | Teaching | | |
| 2 | June III | 4 | Linear Data Structure Using Arrays: 1-D Arrays, 2-D Arrays, N-D Arrays, Memory | Teaching | Assignment/Seminar/Question and Answers | |
| 3 | June IV | 4 | Concept of Ordered List, String Manipulation, Pros and Cons of Arrays | Teaching | | |
| 4 | July I | 4 | Stacks: Concept, Primitive Operations, Abstract Data Type, Representation Stacks | Teaching | | |
| 5 | July II | 4 | Applications of Stacks–Converting Infix Expression to Postfix Expression, | Teaching | Assignment/Seminar/Question and Answers | |
| 6 | July III | 4 | RECURSION: Introduction, Recurrence, Use of Stack in Recursion, Variants of Recursion, | Teaching | | |
| 7 | July IV | 4 | QUEUES: Concept, Primitive Operations, Abstract Data Type, Representation Queues | Teaching | Quiz | |
| 8 | Aug I | 4 | LINKED LISTS: Introduction, Concept, Terminology, Primitive Operations-creating, | Teaching | Assignment/Seminar | |
| 9 | Aug II | 4 | TREES: Introduction, Representation of a General Tree, Binary Tree | Teaching | Seminar | |
| 10 | Aug III | 4 | GRAPHS: Introduction, Graph Abstract Data Type, Representation of Graphs, | Teaching | | |
| 11 | Aug IV | 4 | Selection Sort, Quick Sort, Merge Sort, and Comparison of Sorting Techniques. | Teaching | Group Discussion | |
| 12 | Sep I | 4 | Depth-First Search, Breadth-First Search, Spanning Tree – Prim's Algorithm, Kruskal's | Teaching | | |
| 13 | Sep II | 4 | Quick Sort, Merge Sort, and Comparison of Sorting Techniques. | Teaching | Student Carrier Counselling | |
| 14 | Sep III | 4 | HEAPS: Concept, Implementation, Abstract Data Type, Heap Sort. | Teaching | Assignment/Seminar/Quiz | |
| 15 | Sep IV | 4 | Revision of the Syllabus | Teaching | | |

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# Department of Computer Science
# Nagarjuna Government College, Nalgonda

**Name of the Module:** Data base Management System **Semester:** IV

**Nature of the Module:** Core **Subject:** Computer Science

**Mode of Learning:** Regular 2018-19

**No. of Hours:** 04 **Credits:** 03 **Total Hours:** 60

## CURRICULAR PLAN

| S. No | Month and Week | No. of Hours | Topic | Curricular Activity | Co-curricular Activity | Remarks |
|---|---|---|---|---|---|---|
| 1 | Nov II | 4 | INTRODUCTION TO DATABASES: Introduction, Traditional File-Based | Teaching & Practical (1) | Assignment/Seminar/Question and Answers | |
| 2 | Nov III | 4 | Advantages and Disadvantages of DBMSs, The Three-Level ANSI- | Teaching & Practical (1) | | |
| 3 | Nov IV | 4 | RELATIONAL MODEL: Introduction, Terminology, Integrity Constraints, Views. | Teaching & Practical (1) | | |
| 4 | Dec I | 4 | THE RELATIONAL ALGEBRA: Unary Operations, Set Operations, Join | Teaching & Practical (1) | Assignment/Seminar/Question and Answers | |
| 5 | Dec II | 4 | SQL: Introduction, Data Manipulation–Simple Queries, Sorting Results, Using the | Teaching & Practical (1) | | |
| 6 | Dec III | 4 | SQL: The ISO SQL Data Types, Integrity Enhancement Feature–Domain Constraints, | Teaching & Practical (1) | Quiz | |
| 7 | Dec IV | 4 | Data Definition–Creating a Database, Creating a Table, Changing a Table Definition, | Teaching & Practical (1) | Assignment/Seminar | |
| 8 | Jan I | 4 | ADVANCED SQL: The SQL Programming Language–Declarations, | Teaching & Practical (1) | Seminar | |
| 9 | Jan II | 4 | ENTITY–RELATIONSHIP MODELING: Entity Types, Relationship Types, | Teaching & Practical (1) | | |
| 10 | Jan III | 4 | ENHANCED ENTITY–RELATIONSHIP MODELING: | Teaching & Practical (1) | Group Discussion | |
| 11 | Jan IV | 4 | FUNCTIONAL–DEPENDENCIES: Anomalies, Partial Functional Dependency, | Teaching & Practical (1) | | |
| 12 | Feb I | 4 | NORMALIZATION: The Purpose of Normalization, How Normalization Supports | Teaching & Practical (1) | Student Carrier Counselling | |
| 13 | Feb II | 4 | TRANSACTION MANAGEMENT: Transaction Support–Properties of | Teaching & Practical (1) | Assignment/Seminar/Quiz | |
| 14 | Feb III | 4 | Revision of the Syllabus | Teaching & Practical (1) | | |
| 15 | Feb IV | 4 | Remedial Classes | Teaching & Practical (1) | | |

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# Department of Computer Science
## Nagarjuna Government College, Nalgonda

Name of the Module: **PROGRAMMING IN JAVA**
Nature of the Module: Core

**Semester: V**
**Subject: Computer Science**

**CURRICULAR PLAN**

| S. No | Month and Week | No. of Hours | Topic | Curricular Activity | Co-curricular Activity | Remarks |
|---|---|---|---|---|---|---|
| 1 | June II | 4 | Introduction: Java Essentials, JVM, Java Features, Creation and Execution of Programs, Data Types, Type Conversion, Casting, Conditional Statements, | Teaching | | |
| 2 | June III | 4 | Method Declaration and Invocation, Method Overloading, Constructors– Parameterized Constructors, Constructor Overloading, Cleaning-up unused Objects, | Teaching | Assignment/Seminar/Question and Answers | |
| 3 | June IV | 4 | Methods-static Keyword, this Keyword, One-Dimensional Arrays, Two-Dimensional Arrays, Command-Line Arguments, Inner Class. | Teaching | | |
| 4 | July I | 4 | Inheritance: Introduction, Types of Inheritance, extends Keyword, Examples, Method Overriding, super, final Keywords, Abstract classes, Interfaces, Abstract Classes | Teaching | | |
| 5 | July II | 4 | Packages–Creating and Using Packages, Access Protection, Wrapper Classes, String Class, StringBuffer Class. Exception: Introduction, Types, Exception Handling | Teaching | Assignment/Seminar/Question and Answers | |
| 6 | July III | 4 | Multithreading: Introduction, Main Thread, Creation of New Threads – By Inheriting the Thread Class or Implementing the Runnable Interface | Teaching | | |
| 7 | July IV | 4 | Thread Lifecycle, Thread Priority, Synchronization. Input/Output: Introduction, java.io Package, File Class, FileInputStream Class, FileOutputStream Class | Teaching | Quiz | |
| 8 | Aug I | 4 | Scanner Class, BufferedInputStream Class, BufferedOutputStream Class | Teaching | Assignment/Seminar | |
| 9 | Aug II | 4 | Applets: Introduction, Example, Life Cycle, Applet Class, Common Methods Used in Displaying the Output. Event Handling: Introduction, | Teaching | Seminar | |
| 10 | Aug III | 4 | Types of Events, Example. AWT: Introduction, Components, Containers, Button, Label, Checkbox, Radio Buttons, Container Class, Layouts. | Teaching | | |
| 11 | Aug IV | 4 | Swing: Introduction, Differences between Swing and AWT, Jframe, Japplet, Jpanel, Components in Swings, Layout Managers, Jtable, Dialog Box | Teaching | Group Discussion | |
| 12 | Sep I | 4 | AWT, Jframe, Japplet, Jpanel, Components in Swings, Layout Managers, Jtable, Dialog Box | Teaching | | |
| 13 | Sep II | 4 | Database Handling Using JDBC: Introduction, Types of JDBC Drivers, Load the Driver | Teaching | Student Carrier Counselling | |
| 14 | Sep III | 4 | Create Statement, Execute Query, Iterate Resultset, | Teaching | Assignment/Seminar/Quiz | |
| 15 | Sep IV | 4 | Scrollable Resultset, Developing a JDBS Application. | Teaching | | |

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## Department of Computer Science

## Nagarjuna Government College, Nalgonda

Name of the Module: **COMPUTER NETWORKS**

**Nature of the Module:** Core

**Semester: VI**

Subject: Computer Science

### CURRICULAR PLAN

| S. No | Month and Week | No. of Hours | Topic | Curricular Activity | Co-curricular Activity | Remarks |
|---|---|---|---|---|---|---|
| 1 | Nov II | 4 | Introduction: Data Communication Components, Line Configuration, Topologies, Transmission Mode | Teaching & Practical (1) | Assignment/Seminar/Question and Answers | |
| 2 | Nov III | 4 | Categories of Networks, ISO Reference Model–Layered Architecture, Functions of Layers, TCP/IP Reference Model. | Teaching & Practical (1) | | |
| 3 | Nov IV | 4 | Transmission Media: Guided Media–Twisted Pair Cable, Coaxial Cable, Optical Fiber, Unguided Media–Satellite C | Teaching & Practical (1) | | |
| 4 | Dec I | 4 | Communication, and Cellular Telephony. Multiplexing: Frequency–Division Multiplexing, Time–Division Multiplexing. | Teaching & Practical (1) | Assignment/Seminar/Question and Answers | |
| 5 | Dec II | 4 | Data Link Layer: Error Detection–VRC, LRC, CRC, Checksum, Error Correction–Hamming Code, | Teaching & Practical (1) | | |
| 6 | Dec III | 4 | Burst Error Correction, Line Discipline–ENQ/ACK, Poll/Select, Flow Control–Stop-and-Wait, Sliding Window | Teaching & Practical (1) | Quiz | |
| 7 | Dec IV | 4 | Control–Stop-and-Wait ARQ, Sliding Window ARQ Go-Back-n ARQ, Selective-Reject ARQ. Local Area Networks: Introduction to IEEE 802 | Teaching & Practical (1) | Assignment/Seminar | |
| 8 | Jan I | 4 | Ethernet-CSMA/CD, Implementation, Token Ring,-Token | Teaching & Practical (1) | Seminar | |
| 9 | Jan II | 4 | Passing, Implementation. Switching: Circuit Switching, Packet Switching, Message Switching. | Teaching & Practical (1) | | |
| 10 | Jan III | 4 | Networking and Internetworking Devices: Repeaters, Bridges, Routers, Gateways, Brouter | Teaching & Practical (1) | Group Discussion | |
| 11 | Jan IV | 4 | Switches, Distance Vector Routing Algorithm, Link State Routing Algorithm | Teaching & Practical (1) | | |
| 12 | Feb I | 4 | Transport Layer: Duties of Transport Layer, Connection. | Teaching & Practical (1) | Student Carrier Counselling | |
| 13 | Feb II | 4 | Upper OSI Layers; Session Layer, Presentation Layer, Application Layer | Teaching & Practical (1) | Assignment/Seminar/Quiz | |
| 14 | Feb III | 4 | Revision of the Syllabus | Teaching & Practical (1) | | |
| 15 | Feb IV | 4 | Remedial Classes | Teaching & Practical (1) | | |

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# Department of Computer Science
## Nagarjuna Government College, Nalgonda

Name of the Module: OPERATING SYSTEM
Nature of the Module: Core
Mode of Learning: Regular
No. of Hours: 04
Credits: 03
2018-19
Semester: V
Subject: Computer Science
Total Hours: 60

### CURRICULAR PLAN
Semester: III

| S. No | Month and Week | No. of Hours | Topic | Curricular Activity | Co-curricular Activity | Remarks |
|---|---|---|---|---|---|---|
| 1 | June II | 4 | Introduction: Computer-System Architecture, Computing Environments. Operating-System Structures: Operating-System Services, User Interface | Teaching | | |
| 2 | June III | 4 | User Interface for Operating-System, System Calls, Types of System Calls, Operating System Structure. | Teaching | Assignment/Seminar/Question and Answers | |
| 3 | June IV | 4 | Process Management: Process Concept, Process Scheduling, Operations on Processes | Teaching | | |
| 4 | July I | 4 | Scheduling, Operations on Processes, Inter process Communication, Examples–Producer-Consumer Problem | Teaching | | |
| 5 | July II | 4 | Process Synchronization: Critical-Section Problem, Peterson's Solution, Synchronization, Semaphores, Monitors. | Teaching | Assignment/Seminar/Question and Answers | |
| 6 | July III | 4 | CPU Scheduling: Concepts, Scheduling Criteria, Scheduling Algorithms. | Teaching | | |
| 7 | July IV | 4 | Deadlocks: System Model, Deadlock Characterization, Methods for Handling Deadlock | Teaching | Quiz | |
| 8 | Aug I | 4 | Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock. | Teaching | Assignment/Seminar | |
| 9 | Aug II | 4 | Main Memory: Introduction, Swapping, Contiguous Memory Allocation, Segmentation, Paging. | Teaching | Seminar | |
| 10 | Aug III | 4 | Virtual Memory: Introduction, Demand Paging, Page Replacement, Allocation of Frames, Thrashing. | Teaching | | |
| 11 | Aug IV | 4 | Mass-Storage Structure: Overview, Disk Scheduling, RAID Structure. | Teaching | Group Discussion | |
| 12 | Sep I | 4 | File Systems: File Concept, Access Methods, Directory | Teaching | | |
| 13 | Sep II | 4 | Disk Structure, File-System Mounting, Protection | Teaching | Student Carrier Counselling | |
| 14 | Sep III | 4 | File System Implementation, Directory Implementation | Teaching | Assignment/Seminar/Quiz | |
| 15 | Sep IV | 4 | Allocation Methods, Free-Space Management. | Teaching | | |

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# Department of Computer Science
## Nagarjuna Government College, Nalgonda

Name of the Module: WEB TECHNOLOGIES — Semester: VI

Nature of the Module: Core — Subject: Computer Science

Mode of Learning: Regular — 2018-19

No. of Hours: 04 — Credits: 03 — Total Hours: 60

**CURRICULAR PLAN**

| S. No | Month and Week | No. of Hours | Topic | Curricular Activity | Co-curricular Activity | Remarks |
|---|---|---|---|---|---|---|
| 1 | Nov II | 4 | Objects in Java Script: Data and objects in java script | Teaching | Assignment/Seminar/Question and Answers | |
| 2 | Nov III | 4 | Regular expressions, Exception Handling, Built in objects, Events | Teaching | | |
| 3 | Nov IV | 4 | Dynamic HTML with Java Script: Data validation, Opening a new window | Teaching | | |
| 4 | Dec I | 4 | Messages and Confirmations, The status bar, Writing to a different frame, Rollover buttons | Teaching | Assignment/Seminar/Question and Answers | |
| 5 | Dec II | 4 | Moving images, Multiple pages in a single download, A text-only menu system, Floating logos. | Teaching | | |
| 6 | Dec III | 4 | Active Server Pages and Java: Active Server Pages, Java. | Teaching | Quiz | |
| 7 | Dec IV | 4 | XML: Defining Data for Web applications: Basic XML | Teaching | Assignment/Seminar | |
| 8 | Jan I | 4 | Document type definition, XML schema, | Teaching | Seminar | |
| 9 | Jan II | 4 | Document Object Model, Presenting X | Teaching | | |
| 10 | Jan III | 4 | Good Design: Structure, Tables versus Frames, Accessibility, Internationalization, Exercises | Teaching | Group Discussion | |
| 11 | Jan IV | 4 | Useful Software: Web browsers, Perl, Web servers, mod_perl, Databases, Accessing your ISP | Teaching | | |
| 12 | Feb I | 4 | Protocols: Protocols, IP and TCP, Hyper Text Transfer Protocol, Common Gateway Interface. | Teaching | Student Carrier Counselling | |
| 13 | Feb II | 4 | The Document Object Model, introducing the Document Object Model, Exercises. | Teaching | Assignment/Seminar/Quiz | |
| 14 | Feb III | 4 | Revision of the Syllabus | Teaching | | |
| 15 | Feb IV | 4 | Remedial Classes | Teaching | | |

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**DEPARTMENT OF COMPUTER SCIENCE**

**B.Sc. ( COMPUTER SCIENCE ) I YEAR ( 2018-19 )**

**SEMESTER: I PAPER- I**

**SUBJECT:- PROGRAMMING IN C**

## UNIT – I

**COMPUTER FUNDAMENTALS:** Introduction of Computers, Classification of Computers, Anatomy of a Computer, Memory Hierarchy, Introduction to OS, Operational Overview of a CPU.

**PROGRAM FUNDAMENTALS:** Generation and Classification of Programming Languages, Compiling, Interpreting, Loading, Linking of a Program, Developing Program, Software Development.

**ALGORITHMS:** Definitions, Different Ways of Stating Algorithms (Step-form, Pseudo-code, Flowchart), Strategy for Designing Algorithms, Structured Programming Concept.

**BASICS OF C:** Overview of C, Developing Programs in C, Parts of Simple C Program, Structure of a C Program, Comments, Program Statements, C Tokens, Keywords, Identifiers, Data Types, Variables, Constants, Operators and Expressions, Expression Evaluation–precedence and associatively, Type Conversions.

## UNIT – II

**INPUT-OUTPUT:** Non-formatted and Formatted Input and Output Functions, Escape Sequences,

**CONTROL STATEMENTS:** Selection Statements – if, if-else, nested if, nested if-else, comma operator, conditional operator, switch; Iterative Statements–while, for, do-while; Special Control Statement–goto, break, continue, return, exit.

**ARRAYS AND STRINGS:** One-dimensional Arrays, Character Arrays, Functions from ctype.h, string.h, Multidimensional Arrays.

## UNIT – III

**FUNCTIONS:** Concept of Function, Using Functions, Call-by-Value Vs Call-by-reference, Passing Arrays to Functions, Score of Variables, Storage Classes, Inline Functions, and Recursion.

**POINTERS:** Introduction, Address of Operator (&), Pointer, Uses of Pointers, Arrays and Pointers, Pointers and Strings, Pointers to Pointers, Array of Pointers, Pointer to Array, Dynamic Memory Allocation.

## UNIT – IV

**USER-DEFINED DATA TYPES:** Declaring a Structure (Union) and its members, Initialization Structure (Union), Accessing members of a Structure (Union), Array of Structures (Union), Structures Vs Unions, Enumeration Types.

**FILES:** Introduction, Using Files in C, Working with Text Files, Working with Binary Files, Files of Records, Random Access to Files of Records, Other File Management Functions.

**Text book pradipDey, Manas Ghosh Computer Fundamentals and Programming in C(2e)**

References

1.Ivor Horton,Beginning C
2.Herbert Schildt,The Complete Reference C
3.Paul Deitel, Harvey Deitel,C How To Program
4.Byron S. Gottfried,Theory and Problems of Programming with C
5.Brian W. Kernighan, Dennis M. Ritchie,The C Programming Language
6.B. A. Forouzan, R. F. Gilberg, A Structured Programming Approach Using C

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## DEPARTMENT OF COMPUTER SCIENCE

### B.Sc. ( COMPUTER SCIENCE ) I YEAR ( 2018-19 )

### SEMESTER: II PAPER - II

### SUBJECT :- PROGRAMMING IN C++

UNIT – I

**INTRODUCTION TO C++:** Applications, Example Programs, Tokens, Data Types, Operators, Expressions, Control Structures, Arrays, Strings, Pointers, Searching and Sorting Arrays.

**FUNCTIONS:** Introduction, Prototype, Passing Data by Value, Reference Variables, Using Reference Variables as Parameters, Inline Functions, Default Arguments, Overloading Functions, Passing Arrays to Functions. Object-oriented Programming: Procedural and Object-Oriented Programming, Terminology, Benefits, OOP Languages, and OOP Applications.

UNIT – II

**CLASSES:** Introduction, Defining an Instance of a Class, Why Have Private Members? Separating Class Specification from Implementation, Inline Member Functions, Constructors, Passing Arguments to Constructors, Destructors, Overloading Constructors, Private Member Functions, Arrays of Objects, Instance and Static Members, Friends of Classes, Member-wise Assignment, Copy Constructors, Operator Overloading, Object Conversion, Aggregation.

UNIT – III

**INHERITANCE:** Introduction, Protected Members and Class Access, Base Class Access Specification, Constructors and Destructors in Base and Derived Classes, Redefining Base Class Functions, Class Hierarchies, Polymorphism and Virtual Member Functions, Abstract Base Classes and Pure Virtual Functions, Multiple Inheritance.

**C++ STREAMS:** Stream Classes, Unformatted I/O Operations, Formatted I/O Operations.

UNIT – IV

**EXCEPTIONS:** Introduction, Throwing an Exception, Handling an Exception, Object-Oriented Exception Handling with Classes, Multiple Exceptions, Extracting Data from the Exception Class, Re-throwing an Exception, Handling the bad_alloc Exception.

**TEMPLATES:** Function Templates–Introduction, Function Templates with Multiple Type, Overloading with Function Templates, Class Templates – Introduction, Defining Objects of the Class Template, Class Templates and Inheritance, Introduction to the STL.

**Text** Tony Gaddis, *Starting out with C++: from control structures through objects*(7e)

**References**


1. B. Lippman, *C++ Primer*
2. Bruce Eckel, *Thinking in C++*
3. K.R. Venugopal, *Mastering C++*
4. Herbert Schildt, *C++: The Complete Reference*
5. BjarneStroustrup, *The C++ Programming Language*
6. SouravSahay, *Object Oriented Programming with C++*


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**DEPARTMENT OF COMPUTER SCIENCE**

**B.Sc. ( COMPUTER SCIENCE ) II YEAR ( 2018-19 )**

**SEMESTER: III PAPER- III**

## DATA STRUCTURES

### UNIT – I

**Fundamental Concepts**: Introduction to Data Structures, Types of Data Structures, Introduction to Algorithm, Pseudo-code, Flow Chart, Analysis of Algorithms.

**Linear Data Structure Using Arrays**: 1-D Arrays, 2-D Arrays, N-D Arrays, Memory Representation and Address Calculation of 1-D, 2-D, N-D Arrays, Concept of Ordered List, String Manipulation, Pros and Cons of Arrays.

**Stacks**: Concept, Primitive Operations, Abstract Data Type, Representation Stacks Using Arrays, Prefix, Infix, Postfix Notations for Arithmetic Expression, Applications of Stacks– Converting Infix Expression to Postfix Expression, Evaluating the Postfix Expression, Checking Well-formed (Nested) Parenthesis, Processing of Function Calls, Reversing a String.

### UNIT – II

**RECURSION:** Introduction, Recurrence, Use of Stack in Recursion, Variants of Recursion, Execution of Recursive Calls, Recursive Functions, Iteration versus Recursion.

**QUEUES**: Concept, Primitive Operations, Abstract Data Type, Representation Queues Using Arrays, Circular Queue, Double-Ended Queue, Applications of Queues.

**LINKED LISTS:** Introduction, Concept, Terminology, Primitive Operations-creating, inserting, deleting, traversing, Representation of Linked Lists, Linked List Abstract Data Type, Linked List Variants – Singly Linked List, Doubly Linked List, Linear and Circular Linked List, Representation Stacks and Queues Using Linked Singly Lists, Application of Linked List–Garbage Collection.

### UNIT – III

**TREES:** Introduction, Representation of a General Tree, Binary Tree Introduction, Binary Tree Abstract Data Type, Implementation of Binary Trees, Binary Tree Traversals – Preorder, Inorder, Postorder Traversals, Applications of Binary Trees Briefly.

**GRAPHS**: Introduction, Graph Abstract Data Type, Representation of Graphs, Graph Traversal – Depth-First Search, Breadth-First Search, Spanning Tree – Prim's Algorithm, Kruskal's Algorithm. Hashing: Introduction, Hash Functions, Collision Resolution Strategies.

### UNIT – IV

**SEARCHING AND SORTING**: Sequential (Linear) Search, Binary Search, Bubble Sort, Insertion Sort, Selection Sort, Quick Sort, Merge Sort, and Comparison of Sorting Techniques.

**HEAPS:** Concept, Implementation, Abstract Data Type, Heap Sort.

**Text books** Varsha H. Patil, Data Structures Using C++

**References books**

Nell Dale, C++ Plus Data Structures
Seymor Lipschutz, Data Structures (Revised 1e)
Adam Drozdek, Data Structures and Algorithms in C++
Mark Allen Weiss, Data structures and Algorithm Analysis in C++ (4e)
D.S. Malik, C++ Programming: Program Design Including Data Structures (6e)
Michael Main, Walter Savitch, Data Structures and Other Objects Using C++ (4e)
Michael T. Goodrich, R. Tamassia, David M. Mount, Data Structures and Algorithms in C++
Yonghui Wu, Jiande Wang, Data Structure Practice for Collegiate Programming Contests and Education

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**B.Sc. ( COMPUTER SCIENCE ) II YEAR ( 2018-19 ) SEMESTER: IV PAPER- IV**

# DATABASE MANAGEMENT SYSTEMS

## UNIT – I

**INTRODUCTION TO DATABASES**: Introduction, Traditional File-Based Systems, Database Approach, Roles in the Database Environment, Advantages and Disadvantages of DBMSs, The Three-Level ANSI-SPARC Architecture, Database Languages, Data Models, Functions of a DBMS, Components of a DBMS.

**RELATIONAL MODEL**: Introduction, Terminology, Integrity Constraints, Views.

**THE RELATIONAL ALGEBRA:** Unary Operations, Set Operations, Join Operations, Division Operation, Aggregation and Grouping Operations.

## UNIT – II

**SQL:** Introduction, Data Manipulation–Simple Queries, Sorting Results, Using the SQL Aggregate Functions, Grouping Results, Sub-queries, ANY and ALL, Multi-table Queries, EXISTS and NOT EXIST, Combining Result Tables, Database Updates.

**SQL:** The ISO SQL Data Types, Integrity Enhancement Feature–Domain Constraints, Entity Integrity, Referential Integrity, General Constraints, Data Definition–Creating a Database, Creating a Table, Changing a Table Definition, Removing a Table, Creating an Index, Removing an Index, Views–Creating a View, Removing a View, View Resolution, Restrictions on Views, View Updatability, WITH CHECK OPTION, Advantages and Disadvantages of Views, View Materialization, Transactions, Discretionary Access Control–Granting Privileges to Other Users, Revoking Privileges from Users.

**ADVANCED SQL**: The SQL Programming Language–Declarations, Assignments, Control Statements, Exceptions, Cursors, Subprograms, Stored Procedures, Functions, and Packages, Triggers, Recursion.

## UNIT – III

**ENTITY–RELATIONSHIP MODELING:** Entity Types, Relationship Types, Attributes, Keys, Strong and Weak Entity Types, Attributes on Relationships, Structural Constraints, Problems with ER Models–Fan Traps, Chasm Traps.

**ENHANCED ENTITY–RELATIONSHIP MODELING**: Specialization/Generalization, Aggregation, Composition.

**FUNCTIONAL–DEPENDENCIES**: Anomalies, Partial Functional Dependency, Transitive Functional Dependency, Multi Valued Dependency, Join Dependency.

**NORMALIZATION:** The Purpose of Normalization, How Normalization Supports Database Design, Data Redundancy and Update Anomalies, Functional Dependencies in brief, The Process of Normalization,1NF, 2NF, 3NF, BCNF. The Database Design Methodology for Relational Databases (Appendix–D).

## UNIT – IV

**TRANSACTION MANAGEMENT**: Transaction Support–Properties of Transactions, Database Architecture, Concurrency Control–The Need for Concurrency Control, Serializability and Recoverability, Locking Methods, Deadlock, Time Stamping Methods, Multi-version Timestamp Ordering, Optimistic Techniques, Granularity of Data Items, Database Recovery–The Need for Recovery, Transactions and Recovery, Recovery Facilities, Recovery Techniques, Nested Transaction Model.

**SECURITY**: Database Security–Threats, Computer-Based Controls–Authorization, Access Controls, Views, Backup and Recovery, Integrity, Encryption, RAID.

Text

Thomas M. Connolly, Carolyn E. Begg, Database Systems–A Practical Approach to Design, Implementation, and Management (6e)

References Sharon Allen, Evan Terry, Beginning Relational Data Modeling

Jeffrey A. Hoffer, V. Ramesh, Heikki Topi, Modern Database Management

Raghu Ramakrishnan, Johannes Gehrke, Database Management Systems

Ramez Elmasri, Shamkant B. Navathe, Fundamentals of Database Systems

Abraham Silberschatz, Henry F. Korth, S. Sudarshan, Database System Concepts

C.Coronel, S.Morris, Peter Rob, Database Systems: Design, Implementation, and Management

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## DEPARTMENT OF COMPUTER SCIENCE
## B.Sc III YEAR(2018-19) SEMESTER-V PAPER-V
## SYLLABUS
## PROGRAMMING IN JAVA

### UNIT – I

**INTRODUCTION**: Java Essentials, JVM, Java Features, Creation and Execution of Programs, Data Types, Type Conversion, Casting, Conditional Statements, Loops, Branching Mechanism, Classes, Objects, Class Declaration, Creating Objects, Method Declaration and Invocation, Method Overloading, Constructors– Parameterized Constructors, Constructor Overloading, Cleaning-up unused Objects, Class Variables & Methods-static Keyword, this Keyword, One-Dimensional Arrays, Two-Dimensional Arrays, Command-Line Arguments, Inner Class.

### UNIT – II

**INHERITANCE:** Introduction, Types of Inheritance, extends Keyword, Examples, Method Overriding, super, final Keywords, Abstract classes, Interfaces, Abstract Classes Verses Interfaces.

**PACKAGES**–Creating and Using Packages, Access Protection, Wrapper Classes, String Class, String Buffer Class.

**Exception:** Introduction, Types, Exception Handling Techniques, User-Defined Exception.

### UNIT – III

**MULTITHREADING:** Introduction, Main Thread, Creation of New Threads – By Inheriting the Thread Class or Implementing the Run able Interface, Thread Lifecycle, Thread Priority, Synchronization.

**INPUT/ OUTPUT:** Introduction, java.io Package, File Class, File Input Stream Class, File Output Stream Class, Scanner Class, Buffered Input Stream Class, Buffered Output Stream Class, Random Access File Class.

**APPLETS**: Introduction, Example, Life Cycle, Applet Class, Common Methods Used in Displaying the Output.

### UNIT – IV

**EVENT HANDLING:** Introduction, Types of Events, Example.

**AWT:** Introduction, Components, Containers, Button, Label, Checkbox, Radio Buttons, Container Class, Layouts.

**SWING:** Introduction, Differences between Swing and AWT, Jframe, Japplet, Jpanel, Components in Swings, Layout Managers, Jtable, Dialog Box.

**DATABASE HANDLING USING JDBC:** Introduction, Types of JDBC Drivers, Load the Driver, Establish Connection,Create Statement, Execute Query, Iterate Result set, Scrollable Result set, Developing a JDBS Application.

**TEXT BOOK** Sachin Malhotra, Saurabh Choudhary, Programming in Java (2e)

**REFERENCES BOOKS**


Bruce Eckel, Thinking in Java (4e) Herbert Schildt,
Java: The Complete Reference (9e) Y. Daniel Liang,
Introduction to Java Programming (10e)Paul Deitel, Harvey Deitel,
Java: How To Program (10e) Cay S. Horsttnann,
Core Java Volume I – Fundamentals (10e) C. Thomas Wu,
An introduction to object-oriented programming with Java (5e) Tony Gaddis,
Starting Out with Java From Control Structures Through Objects (6e) Jeanne Boyarsky, Scott Selikoff,
OCA: Oracle Certified Associate Java SE 8 Programmer–I Study Guide


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SYLLABUS

## OPERATING SYSTEMS

### UNIT – I

**INTRODUCTION:** Computer-System Architecture, Computing Environments.

**OPERATING-SYSTEM STRUCTURES:** Operating-System Services, User Interface for Operating-System, System Calls, Types of System Calls, Operating System Structure.

### UNIT – II

**PROCESS MANAGEMENT:** Process Concept, Process Scheduling, Operations on Processes, Inter process Communication, Examples–Producer-Consumer Problem.

Process Synchronization: Critical-Section Problem, Peterson's Solution, Synchronization, Semaphores, Monitors.

### UNIT-III

**CPU SCHEDULING:** Concepts, Scheduling Criteria, Scheduling Algorithms.

**DEADLOCKS:** System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock.

### UNIT – IV

**MAIN MEMORY:** Introduction, Swapping, Contiguous Memory Allocation, Segmentation, Paging. Virtual Memory: Introduction, Demand Paging, Page Replacement, Allocation of Frames, Thrashing.

**MASS-STORAGE STRUCTURE:** Overview, Disk Scheduling, RAID Structure.

**FILE SYSTEMS:** File Concept, Access Methods, Directory and Disk Structure, File-System Mounting, Protection. File System Implementation, Directory Implementation, Allocation Methods, Free-Space Management.

**TEXT BOOK** Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, Operating System Concepts (9e)

**REFERENCES BOOKS**

Naresh Chauhan, Principles of Operating Systems Thomas W. Doeppner,
Operating Systems in Depth Andrew S. Tanenbaum,
Modern Operating Systems William Stallings,
Operating Systems – Internals and Design Principles Dhananjay M. Dhandhere,
Operating Systems – A Concept Based Approac

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SYLLABUS
COMPUTER NETWORKS

## UNIT – I

**INTRODUCTION:** Data Communication Components, Line Configuration, Topologies, Transmission Mode, Categories of Networks, ISO Reference Model–Layered Architecture, Functions of Layers, TCP/IP Reference Model.

**TRANSMISSION MEDIA:** Guided Media–Twisted Pair Cable, Coaxial Cable, Optical Fiber, Unguided Media– Satellite Communication, and Cellular Telephony.

## UNIT – II

**MULTIPLEXING:** Frequency–Division Multiplexing, Time–Division Multiplexing.

**Data Link Layer:** Error Detection–VRC, LRC, CRC, Checksum, Error Correction–Hamming Code, Burst Error Correction, Line Discipline–ENQ/ACK, Poll/Select, Flow Control–Stop-and-Wait, Sliding Window, Error Control–Stop-and-Wait ARQ, Sliding Window ARQ Go-Back-n ARQ, Selective-Reject ARQ.

## UNIT – III

**LOCAL AREA NETWORKS:** Introduction to IEEE 802, Ethernet-CSMA/CD, Implementation, Token Ring,-Token Passing, Implementation.

**SWITCHING**: Circuit Switching, Packet Switching, Message Switching.

## UNIT-IV

**NETWORKING AND INTERNETWORKING DEVICES**: Repeaters, Bridges, Routers, Gateways, Brouters, Switches,Distance Vector Routing Algorithm, Link State Routing Algorithm.

**TRANSPORT LAYER:** Duties of Transport Layer, Connection.Upper OSI Layers; Session Layer, Presentation Layer, Application Layer.

TEXT BOOK Behrouz A. Forouzan, Data Communication and Networking (2e Update)

## References

S.S. Shinde, Computer Networks William Stallings,
Data and Computer Communications Andrew S. Tanenbaum, David J Wetherall,
Computer Networks Behrouz A Forouzan, Firouz Mosharraf,
Computer Networks A Top-Down Approach James F. Kurose, Keith W. Ross,
Computer Networking: A Top-Down Approach Featuring the Internet

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Nalgonda - 508 254.(T.S.)

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Ramagiri, NALGONDA. (A.P.)

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NALGONDA.

NAGARJUNA GOVT. DEGREE COLLEGE:NALGONDA
(AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE
B.Sc III YEAR(2017-18) SEMESTER-VI PAPER-VIII
SYLLABUS
WEB TECHNOLAGIES

## UNIT – I

**STRUCTURING DOCUMENTS FOR THE WEB:** Introducing HTML and XHTML, Basic Text Formatting, Presentational Elements, Phrase Elements, Lists, Editing Text, Core Elements and Attributes, Attribute Groups
**LINKS AND NAVIGATION:** Basic Links, Creating Links with the <a> Element, Advanced E- mail Links.
**IMAGES, AUDIO, AND VIDEO:** Adding Images Using the <img> Element, Using Images as Links Image Maps, Choosing the Right Image Format, Adding Flash, Video and Audio to your web pages.
**TABLES:** Introducing Tables, Grouping Section of a Table, Nested Tables, Accessing Tables.

## UNIT – II

**FORMS:** Introducing Forms, Form Controls, Sending Form Data to the Server
**FRAMES:** Introducing Frameset, <frame> Element, Creating Links Between Frames, Setting a Default Target Frame Using <base> Element, Nested Framesets, Inline or Floating Frames with <iframe>.
**CASCADING STYLE SHEETS:** Introducing CSS, Where you can Add CSS Rules.
**CSS PROPERTIES:** Controlling Text, Text Formatting, Text Pseudo Classes, Selectors, Lengths, Introducing the Box Model.

## UNIT – III

**MORE CASCADING STYLE SHEETS:** Links, Lists, Tables, Outlines, The :focus and :activate Pseudo classes Generated Content, Miscellaneous Properties, Additional Rules, Positioning and Layout with CSS
**PAGE LAYOUT:** Understating the Site's Audience, Page Size, Designing Pages, Coding your Design, Developing for Mobile Devices.
**DESIGN ISSUES:** Typography, Navigation, Tables, Forms.

## UNIT-IV

**LEARNING JAVASCRIPT:** How to Add Script to Your Pages, the Document Object Model, Variables, Operators, Functions, Control Statements, Looping, Events, Built- In Objects,
**WORKING WITH JAVASCRIPT:** Practical Tips for Writing Scripts, Form Validation, Form Enhancements, JavaScript Libraries.
**PUTTING YOUR SITE ON THE WEB:** Meta tags, Testing your site, Talking the Leap to Live, Telling the World about your site, Understanding your visitors.

Text book Jon Duckett, Beginning HTML, XTML, CSS and JavaScript

Reference s


Chris Bates, Web Programming

M. Srinivasan, Web Technology: Theory and Practice

Achyut S. Godbole, Atul Kahate, Web Technologies

Kogent Learning Solutions Inc, Web Technologies Black Book

Ralph Moseley and M. T. Savaliya, Developing Web Applications

P.J. Deitel & H.M. Deitel, Internet and World Wide Web How to program


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## Computation using Excel

**2 Credits**

**UNIT-I: UNDERSTANDING EXCEL:** Excel's Files, Ribbon and shortcut, Create a workbook, Enter data in a worksheet, Format a worksheet, Format numbers in a worksheet, Create an Excel table, Filter data by using an Auto filter, Sort data by using an AutoFilter. Essential worksheet Operations: Using Short cut keys, Key board shortcuts. Working with Cells and Ranges: Formatting Cells, Name Manager. Visualizing Data Using Conditional Formatting: Apply conditional formatting. Printing Your Work: Print a worksheet, Using Print Preview and other utilities

**UNIT-II: DATES AND TIMES & TEXT:** Working with Dates & Time, Creating Formulas that Manipulate text – Upper, Proper, Lower, Concatenate, Text to Column. Creating Formulas that Count, Sum, Subtotal. Create a formula, Use a function in a formula. Creating Formulas that Look up Values: VLookup, Hlookup, Match & index. Creating charts and Graphics. Chart the data, Creating Sparkline Graphics, Using Insert Tab utilities.

**Suggested Books:**


1. Charts and Graphs Microsoft Excel 2013 – **Bill Felen – Pearson Publication.**
2. Statistics made simple do it yourself on PC – **KVS Sarma – 2nd Edition – PHI.**
3. Microsoft Office 2007- Essential Concepts and Techniques – **Shelly Cashman Vermaat – Cengage Learning.**
4. PC software Under Windows – **Puneet Kumar – Kalyani Publishers.**


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DEPARTMENT OF COMPUTER SCIENCE

B.Sc. ( COMPUTER SCIENCE ) I YEAR ( 2018-19 )

SEMESTER: I

**C LAB** **PRACTICAL QUESTION BANK** Practical: 2 Hours/Week

1.Write a program to find the largest two (three) numbers using if and conditional operator.

2.Write a program to print the reverse of a given number.

3.Write a program to print the prime number from 2 to n where n is given by user.

4.Write a program to find the roots of a quadratic equation using switch statement.

5.Write a program to print a triangle of stars as follows (take number of lines from user):

```
*
***
*****
*******
*********
```

6.Write a program to find largest and smallest elements in a given list of numbers.

7.Write a program to find the product of two matrices..

8.Write a program to find the GCD of two numbers using iteration and recursion.

9.Write a program to illustrate use of storage classes.

10.Write a program to demonstrate the call by value and the call by reference concepts.

11.Write a program that prints a table indicating the number of occurrences of each alphabet in the text entered as command line arguments.

12.Write a program to illustrate use of data type enum.

13.Write a program to demonstrate use of string functions string.h header file.

14.Write a program that opens a file and counts the number of characters in a file.

15.Write a program to create a structure Student containing fields for Roll No., Name, Class, Year and Total Marks. Create 10 students and store them in a file.

16.write a program that opens an existing text file and copies it to a new text file with all lowercase letters changed to capital letters and all other characters unchanged.

**Note:**

1. Write the Pseudo Code and draw Flow Chart for the above programs.
2. Recommended to use Open Source Software: GCC on Linux; Dev C++ (or) Code Blocks on Windows 10.

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**Object Oriented Programming in C++ Practical**

**C++ Lab** **PRACTICAL QUESTION BANK** Practical: 2 Hours/Week

1. Write a program to.
   a. Print the sum of digits of a given number.
   b. Check whether the given number is Armstrong or not
   c. Print the prime number from 2 to n where n is natural number given.

2. Write a program to find largest and smallest elements in a given list of numbers and sort the given list.

3. Write a menu driven program that can perform the following functions on strings. (Use overloaded operators where possible).
   a. Compare two strings for equality (== operator)
   b. Check whether first string is smaller than the second (<= operator)
   c. Copy the string to another.
   d. Extract a character from the string (overload [])
   e. Reverse the string.
   f. Concatenate two strings (+ operator)

4. Write a program using friend functions and inline functions.
5. Write a program to find area of a rectangle, circle, and square using constructors.
6. Write a program to implement copy constructor.
7. Write a program to demonstrate single inheritance and multiple inheritances.
8. Write a program to demonstrate hierarchical inheritance and multipath inheritance(using virtual functions)
9. Write a program to demonstrate static polymorphism using method overloading.
10. Write a program to demonstrate dynamic polymorphism using method overriding and dynamic method dispatch.
11. Write a program to demonstrate the function templates and class templates.
12. Write a program to menu driven program for accepting two numbers and perform calculator operations addition, subtraction, multiplication, division and remainder using function template.
13. Write a program to demonstrate exception handling.
14. Write a program to demonstrate various input-output manipulations.
15. Write a program to implement stack abstract data type.
16. Write a program to demonstrate array of objects.

**Note:** Recommended to use Open Source Software: GCC on Linux; Dev C++ (or) Code Blocks on Windows 10.

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**DEPARTMENT OF COMPUTER SCIENCE**
**B.Sc II YEAR(2018-19)**
**PRACTICAL QUESTION BANK**
**PAPER – III**

TIME 3 HOURS Max.Marks 50

# DATA STRUCTURES LAB

1.Write programs to implement the following using an array: a) Stack ADT b) Queue ADT.
2. Write a program to convert the given infix expression to postfix expression using stack.
3. Write a program to evaluate a postfix expression using stack.
4 .Write a program to ensure the parentheses are nested correctly in an arithmetic expression.
5. Write a program to find following using Recursion
   a) Factorial of +ve Integer b) nth term of the Fibonacci Sequence c) GCD of two +ve integers
6. Write a program to create a single linked list and write functions to implement the following operations.
   a. Insert an element at a specified position
   b. Delete a specified element in the list
   c. Search for an element and find its position in the list
   d. Sort the elements in the list ascending order
7. Write a program to create a double linked list and write functions to implement the following operations.
   a. Insert an element at a specified position
   b. Delete a specified element in the list
   c. Search for an element and find its position in the list
   d. Sort the elements in the list ascending order
8. Write a program to create singular circular linked lists and function to implement the following operations.
   a. Insert an element at a specified position
   b. Delete a specified element in the list
   c. Search for an element and find its position in the list
9. Write programs to implement the following using a single linked list:
   a. Stack ADT b. Queue ADT.
10. Write a program to implement Binary search technique using Iterative method and Recursive methods.
11. Write a program for sorting the given list numbers in ascending order using the following technique: Bubble sort and Selection sort
12 Write a program for sorting the given list numbers in ascending order using the following technique: Insertion sort and Quick sort
13 Write a program for sorting the given list numbers in ascending order using the following technique: Merge sort and Heap sort
14 Write a program to traverse a binary tree in following way.
   a. Pre-order b. In-order c. Post-order
15. Write a program to the implementation graph traversals – BFS and DFS.
16. Write a program to find the minimum spanning tree for a weighted graph using
   a. Prim's Algorithm b. Kruskal's Algorithm.

Note:
Write the Pseudo Code for the above programs.
Recommended to use Open Source Software: GCC on Linux; DevC++ (or) CodeBlocks on Windows.

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**PRACTICAL QUESTION BANK**

TIME 3 HOURS | **PAPER – IV** | Max.Marks 50

# DATABASE MANAGEMENT SYSTEMS

Consider the relational schema for part of the DreamHome case study is:
Branch (branchNo, street, city, postcode)
Staff (staffNo, fName, lName, position, sex, DOB, salary, branchNo)
PropertyForRent (propertyNo, street, city, postcode, type, rooms, rent, ownerNo, staffNo, branchNo)
Client (clientNo, fName, lName, telNo, prefType, maxRent, eMail)
PrivateOwner (ownerNo, fName, lName, address, telNo, eMail, password)
Viewing (clientNo, propertyNo, viewDate, comment)
Registration (clientNo, branchNo, staffNo, dateJoined)

1. Create a database with name "DreamHome" and now create all the tables listed above with constraints.
2. Insert a new row into the table supplying data for all columns.
3. Modify data in the database using UPDATE
4. Delete data from the database using DELETE
5. Changing a table definition using ALTER
6. Removing a table using DROP
7. Removing rows in table using TRUNCATE
8. Create an index and removing an index
9. Practice other standard SQL commands for creating, modifying, displaying data of tables.
10. List full details of all staff.
11. List all staff with a salary greater than £10000.
12. List the property numbers of all properties that have been viewed.
13. Produce a list of salaries for all staff, showing only the staffNo, fName, lName, and salary details.
14. List all cities where there is either a branch office or a property for rent.
15. List all cities where there is a branch office but no properties for rent.
16. List all cities where there is both a branch office and at least one property for rent.
17. List the names and comments of all clients who have viewed a property for rent.
18. Produce a status report on property viewings.
19. List complete details of all staff who work at the branch in Glasgow.
20. List the addresses of all branch offices in London or Glasgow
21. List all staff with a salary between £20,000 and £30,000.
22. Identify all clients who have viewed all properties with three rooms.
23. How many properties cost more than £350 per month to rent?
24. How many different properties were viewed in May 2013?
25. Find the total number of Managers and the sum of their salaries.
26. Find the minimum, maximum, and average staff salary.
27. Find the number of staff working in each branch and the sum of their salaries.
28. List all managers and supervisors.
29. Find all owners with the string 'Glasgow' in their address.
30. List the details of all viewings on property PG4 where a comment has not been supplied.
31. Produce a list of salaries for all staff, arranged in descending order of salary.
32. Produce an abbreviated list of properties arranged in order of property type.

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33. Find the number of staff working in each branch and the sum of their salaries.
34. For each branch office with more than one member of staff, find the number of staff working in each
branch and the sum of their salaries.
35. List the staff who work in the branch at '163 Main St'.
36. List all staff whose salary is greater than the average salary, and show by how much their salary is
greater than the average.
37. List the properties that are handled by staff who work in the branch at '163 Main St'.
38. Find all staff whose salary is larger than the salary of at least one member of staff at branch B003.
39. Find all staff whose salary is larger than the salary of every member of staff at branch B003
40. List the names of all clients who have viewed a property, along with any comments supplied.
41. For each branch office, list the staff numbers and names of staff who manage properties and the
properties that they manage.
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42. For each branch, list the staff numbers and names of staff who manage properties, including the city in
which the branch is located and the properties that the staff manage.
43. Find the number of properties handled by each staff member, along with the branch number of the
member of staff.
44. List all branch offices and any properties that are in the same city.
45. List all properties and any branch offices that are in the same city.
46. List the branch offices and properties that are in the same city along with any unmatched branches or
properties.
47. Find all staff who work in a London branch office.
48. Construct a list of all cities where there is either a branch office or a property.
49. Construct a list of all cities where there is both a branch office and a property.
50. Create a view so that the manager at branch B003 can see the details only for staff who work in his or her
branch office.
51. Create a view of the staff details at branch B003 that excludes salary information, so that only managers
can access the salary details for staff who work at their branch.
52. Create a view of staff who manage properties for rent, which includes the branch number they work at,
their staff number, and the number of properties they manage.
53. Removing a view using DROP VIEW
54. Give the user with authorization identifier Manager all privileges on the Staff table.
55. Give users Personnel and Director the privileges SELECT and UPDATE on column salary of the Staff table.
56. Revoke the privilege SELECT on the Branch table from all users.
57. Revoke all privileges you have given to Director on the Staff table.
58. Demonstrate exceptions in PL/SQL
59. Demonstrate cursors in PL/SQL
60. Write PL/SQL queries to create procedures.
61. Write PL/SQL queries to create functions.
62. Write PL/SQL queries to create package.
63. Write PL/SQL queries to create triggers.

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64. Write PL/SQL queries using recursion.
Consider the relational schema for part of the Hotel case study is:
Hotel (hotelNo, hotelName, city)
Room (roomNo, hotelNo, type, price)
Booking (hotelNo, guestNo, dateFrom, dateTo, roomNo)
Guest (guestNo, guestName, guestAddress)
65. Create a database with name "Hotel" and now create all the tables listed above with constraints.
66. Insert a new row into the table supplying data for all columns.
67. Modify data in the database using UPDATE
68. Delete data from the database using DELETE
69. Changing a table definition using ALTER
70. Removing a table using DROP
71. Removing rows in table using TRUNCATE
72. Practice other standard SQL commands for creating, modifying, displaying data of tables.
73. List full details of all hotels.
74. List full details of all hotels in London.
75. List the names and addresses of all guests living in London, alphabetically ordered by name.
76. List all double or family rooms with a price below £40.00 per night, in ascending order of price.
77. List the bookings for which no dateTo has been specified.
78. How many hotels are there?
79. What is the average price of a room?
80. What is the total revenue per night from all double rooms?
81. How many different guests have made bookings for August?
82. List the price and type of all rooms at the Grosvenor Hotel.
83. List all guests currently staying at the Grosvenor Hotel.
84. List the details of all rooms at the Grosvenor Hotel, including the name of the guest staying in the room.
85. What is the total income from bookings for the Grosvenor Hotel today?
86. List the rooms that are currently unoccupied at the Grosvenor Hotel.
87. What is the lost income from unoccupied rooms at the Grosvenor Hotel?
88. List the number of rooms in each hotel.
89. List the number of rooms in each hotel in London.
90. What is the average number of bookings for each hotel in August?
91. What is the most commonly booked room type for each hotel in London?

92. What is the lost income from unoccupied rooms at each hotel today?
93. Insert rows into each of these tables.
94. Update the price of all rooms by 5%.
95. Demonstrate that queries written using the UNION operator and same can be rewritten using the OR.
96. Apply the syntax for inserting data into a table.
97. Create a view containing the cheapest hotels in the world.
98. Create the Hotel table using the integrity enhancement features of SQL.
99. Create a database trigger for the following situations:
(a) The price of all double rooms must be greater than £100.
(b) The price of double rooms must be greater than the price of the highest single room.
(c) A booking cannot be for a hotel room that is already booked for any of the specified dates.
(d) A guest cannot make two bookings with overlapping dates.

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(e) Maintain an audit table with the names and addresses of all guests who make bookings for hotels in London (do not store duplicate guest details).
Given relation schemas are Sailors(sid : integer, sname : string, rating : integer, age : real) Boats(bid : integer, bname : string, color : string)
Reserves(sid : integer , bid : integer, day : date)
100. Find the names and ages of all sailors.
101. Find all sailors with a rating above 7.
102. Find the names of sailors who have reserved boat 103.
103. Find the sids of sailors who have reserved a red boat.
104. Find the names of sailors who have reserved a red boat.
105. Find the colors of boats reserved by Lubber..
106. Find the names of sailors who have reserved at least one boat.
107. Find the names of sailors who have reserved at least two boats.
108. Compute increments for the ratings of persons who have sailed two different boats on the same day.
109. Find the ages of sailors whose name begins and ends with B and has at least three characters.
110. Find the names of sailors who have reserved a red or a green boat.
111. Find the names of sailors who have reserved a red and a green boat.
112. Find the sids of all sailors who have reserved red boats but not green boats.
113. Find all sids of sailors who have a rating of 10 or have reserved boat 104.
114. Find the names of sailors who have not reserved a red boat.
115. Find sailors whose rating is better than some sailor called Horatio.
116. Find sailors whose rating is better than every sailor called Horatio.
117. Find the names of sailors who have reserved all boats.
118. Find the names of sailors who have reserved at least two boats.
119. Find the names of sailors who have reserved all boats called Interlake.
120. Find sailors who have reserved all red boats.
121. Find the sailor name, boat id, and reservation date for each reservation.
122. Find the sids of sailors with age over 20 who have not reserved a red boat.
123. Find the average age of all sailors.
124. Find the average age of sailors with a rating of 10.
125. Find the name and age of the oldest sailor.
126. Count the number of different sailor names.
127. Find the names of sailors who are older than the oldest sailor with a rating of 10.
128. Find the sailors with the highest rating.
129. Find the age of the youngest sailor for each rating level.
130. Find age of the youngest sailor who is eligible to vote for each rating level with at least 2 such sailors.
131. Find the average age of sailors for each rating level that has at least two sailors.
132. For each red boat, find the number of reservations for this boat.
133. Find the average age of sailors who are of voting age (i.e., at least 18 years old) for each rating level
that has at least two sailors.
134. Delete the records of sailors who have rating 8 (deleting some rows in a table).
135. Loading data which is present in the text into the table.
Note:
Recommended to use open source database software like MySQl, MongoDB, PostgreSQL, etc...
In practical examination, students have to
- Create database
- Create tables with their integrity constraints.
- Insert the data into tables and then execute the queries.
- Answer any six queries from ten queries given by the examiner.

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**NAGARJUNA GOVT. DEGREE COLLEGE: NALGONDA(AUTONOMOUS)**
**B.Sc III YEAR(2018-19 ) PAPER V**
**PRACTICAL QUESTION BANK**

**TIME : 3 HOURS** **MAX.MARKS : 50**

## JAVA LAB

Write java programs to find the following

1. a) largest of given three numbers b) reverses the digits of a number
   c) given number is prime or not d) GCD of given two integers
2. Write java programs that implement the following
   a) default constructor b) parameterized constructor c) constructor overloading
3. a) Write a java program to find the smallest of given list integers using array and scanner class.
   b) Write a java program for multiplication of two matrices.
4. a) Write a java program for demonstrating an inner classes or nested classes.
   b) Write a java program to implement method overloading, method overriding, dynamic method dispatch
5. Write a java program to implement single, multilevel, hierarchal, multiple, hybrid inheritances.
6. Write java programs that demonstrate the use of abstract, this, super, static, final keywords
7. a) Write a java program for creating a package and using a package.
   b) Write a java program to demonstrate the use of wrapper classes.
8. a) Write a java program using all five keywords of exception handling mechanism.
   b) Write a java program for creating customized (user) exception
9. a) Write a java program that checks whether a given string is a palindrome or not.
   b) Write a java program for sorting a given list of names in ascending order.
10. a) Write a java program to create a file, write the data and display the data.
    b) Write a java program that reads a file name from user and displays its information.
11. a) Write a java program for controlling main thread.
    b) Write a java program for creating new thread by extending Thread class.
12. a) Write a java program for creating new thread by implementing Runnable interface.
    b) Write a java program for thread synchronization.
13. a) Write a java program to create following AWT components: Button, Checkbox, Choice, and List. b) Write java programs to create AWT application using containers and layouts.
14. a) Write java programs to create a simple Applet and create swing based Applet.
    b) Write a java program to handle different types of events in a swing application.
15. Write java programs to create a swing application using swing components and layouts.
16. Write a java program to store and retrieve data from database using JDBC.

Note:Write the program using simple text editors (not IDE), compile and run from command prompt. Encourage students to develop small java applications using IDE, like giving as assignment. Write a small java application using some features of java.

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**B.Sc III YEAR(2018-19 ) PAPER VI**

**PRACTICAL QUESTION BANK**

**TIME : 3 HOURS** **MAX.MARKS : 50**

## Operating Systems

1.a) Use vi editor to create different files, writing data into files, modifying data in files.
b) Use different types of Unix commands on the files created in first program.
2 Write shell programs using 'case', 'then' and 'if' & 'else' statements.
3 Write shell programs using while, do-while and for loop statements.
4. a) Write a shell script that accepts two integers as its arguments and computers the value of first number raised to the power of the second number.
b) Write a shell script that takes a command --line argument and reports on whether it is directory, a file, or something else.
5.a) Write a shell script that accepts a file name, starting and ending line numbers as arguments and displays all the lines between the given line numbers..
b) Write a shell script that deletes all lines containing a specified word in one or more files supplied as arguments to it.
6.a) Write a shell script that displays a list of all the files in the current directory to which the user has read, write and execute permissions.
b) Develop an interactive script that ask for a word and a file name and then tells how many times that word occurred in the file.
7. Write a program that simulate the following Unix commands like ls, mv, cp.
8. Write a program to convert upper case to lower case letters of a given ASCII file.
9. Write a program to program to search the given pattern in a file.
10. Write a program to demonstrate FCFS process schedules on the given data.
11. Write a program to demonstrate SJF process schedules on the given data.
12. Write a program to demonstrate Priority Scheduling on the given burst time and arrival times.
13. Write a program to demonstrate Round Robin Scheduling on the given burst time and arrival times.
14. Write a program to implementing Producer and Consumer problem using Semaphores.
15. Write a program to simulate FIFO, LRU, LFU Page replacement algorithms.
16. Write a program to simulate Sequential, Indexed, and Linked file allocation strategies.

Note:
Recommended to use Open Source Software like Fedora, Ubuntu, CentOS, etc...

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**B.Sc III YEAR(2018-19)**

# Networks Lab

**PRACTICAL QUESTION BANK**

**TIME : 3 HOURS** **MAX.MARKS : 50**

1 Write a program to create a socket and implement connect function.

2 Write a program to get MAC address.

3 Write a program to display hello world using signals.

4 Write a program for socket pair system call using IPC.

5 Write a program to implement the sliding window protocol.

6 Write a program to identify the category of IP address for a given IP address.

7 Write a program to print details of DNS host.

8 Write a program to implement listener and talker.

9 Write a program to implement TCP echo using client-server program.

10 Write a program to implement UDP echo using client-server program.

11 Write a UDP client-server program to convert lowercase letters to uppercase letters.

12 Write a TCP client-server program to convert a given string into reverse.

13 Write a UDP client-server program to convert a given string into reverse.

14 Write a program to implement TCP iterative client-server program.

15 Write a program to implement time service using TCP client-server program.

16 Write a program to implement time service using UDP client-server program.

NoteWrite above program using C language on Unix/Linux systems.

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**PRACTICAL QUESTION BANK**

**TIME : 3 HOURS** **MAX.MARKS : 50**

# Web Technologies Lab

1. a.Write a HTML program using basic text formatting tags, <hn>, <p>, <br>, <pre>.

   b.Write a HTML page for Example Cafe using above text formatting tags.

2..a Write a HTML program using presentational element tags <b>, <i>, <strike>, <sup>, <sub>, <big>, <small>, <hr>.

   b.Write a HTML program using phrase element tags <blockquote>, <cite>, <abbr>, <acronym>, <kbd>, <address>

3.a. Write a HTML program using different list types.

   b. Write a HTML page that displays ingredients and instructions to prepare a recipe.

4. a. Write a HTML program using grouping elements  and .

   b. Write a HTML Menu page for Example cafe site.

5.a. Write a HTML program using images, audios, videos.

   b. Write a HTML program to create your time table.

6. Write a HTML program to create a form using text inputs, password inputs, multiple line text input,buttons, check boxes, radio buttons, select boxes, file select boxes.

7. Write a HTML program to create a frames and links between frames.

8. Write a HTML program to create different types of style sheets.

9. Write a HTML program to create CSS on links, lists, tables and generated content.

10. Write a HTML program to create your college web site using multi column layouts.

11.Write a HTML program to create your college web site using for mobile device.

12.Write a HTML program to create login form and verify username and password using DOM

13.Write a JavaScript program to calculate area of rectangle using function.

b. Write a JavaScript program to wish good morning, good afternoon, good evening depending on the current time. a. Write a JavaScript program using switch case?.

14 a.Write a JavaScript program to print multiplication table of given number using loop. a. Write a JavaScript programs using any 5 events.

15 a. Write a JavaScript program using JavaScript built in objects.

   b. Write a JavaScript program to create registration form and validate all fields using form **validation.**

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## TENTATIVE SCHEME OF EVALUATION

**COURSE: B.Sc.,** **SUBJECT: Computer Science** **2018-19**

**Semester: IV** **Module: C PROGRAMMING**

**Time: 2:30 Hours** **PAPER -I** **Max. Marks: 70**

### PART-A

**I. Answer the following questions in one or two sentences.** **5x2=10**

1. What is RAM?
2. What is Compiler?
3. What is Array?
4. Define Enumerated Data type?
5. Explain C Tokens?

### PART-B

**II. Answer any four questions from the following not exceeding 20 lines.** **4x5=20**

6. Explain about Control Statements?
7. What is String. And Explain It?
8. What is Call- By - Value. Explain?
9. Write a Program to find Factorial of a given Number?
10. What is Algorithm? Explain its Characteristics
11. Explain Call-by- address?

### PART-C

**III. Answer the following questions not exceeding 40 lines** **4x10=40**

12. A) Explain about Different Data types in C language?

OR

B) What is Operating System?

13. A) Explain Looping Statements with an Example Program?

OR

B) Write a Program Matrix multiplication using Arrays?

14. A) What is Storage class? Explain Different types of Storage classes?

OR

B) What is Pointer? Give to suitable example programs.

15. A) Define the Structure? Explain it with an Example program

OR

B) Explain about Working with Binary Files.

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TENTATIVE SCHEME OF EVALUATION

COURSE: B.Sc., SUBJECT: COMPUTER SCIENCE 2018-19

SEMESTER: II **Module: C++ PROGRAMMING**

Time: 2:30 **PAPER-II** Max.Marks:70

## PART-A

**I. Answer the following questions in one or two sentences.** **5x2=10**

1. What is an Exception?
2. What is a Array?
3. What is a Class?
4. Define the Constructor?
5. Define the Inheritance?

## PART-B

**II. Answer any four questions from the following not exceeding 20 lines.** **4x5=20**

6. Explain about OOPs?
7. Write a short note on Data types?
8. What is Virtual Function?
9. Explain about Polymorphism?
10. Explain about Unformatted I/O Operations.

## PART-C

**III. Answer the following questions not exceeding 40 lines.** **4x10=40**

12. A) Explain about Control structures in C++.

OR

B) What is Function? Explain about Call-by-value?

13. A) Explain about Operator overloading?

OR

B) Write a Program to implement copy constructor?

14. A) Explain about Different types of inheritances?

OR

B) Explain Friend functions and Inline functions?

15. A) Explain about Exception Handling in C++?

OR

B) Explain about Templates?

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TENTATIVE SCHEME OF EVALUATION

COURSE: B.Sc., SUBJECT:- COMPUTER SCIENCE 2018-19

SEMESTER: III Module: DATA STRUCTURES USING C++

Time: 2:30 PAPER-III Max.Marks:70

PART-A

**I. Answer the following questions in one or two sentences. 5x2=10**

1. What is Data Structure?
2. What is rear?
3. What is a Stack?
4. Define Graph?
5. Define the Linked List?

PART-B

**II. Answer any four questions from the following not exceeding 20 lines. 4x5=20**

6. Explain Postfix with Example?
7. What is Circular Queues?
8. What is DFS?
9. Explain about Double Linked List?
10. Sort the Numbers 75,42,23,87,96,65,12,36 by using Insertion Sort?

PART-C

**III. Answer the following questions not exceeding 40 lines. 4x10=40**

12. A) What is Flowchart? Explain it With Example Program?.

OR

B) Explain about String Manipulation?

13. A) Explain about Double Ended Queues with example?

OR

B) Write a Program for Single Linked List?

14. A) Explain about Binary concepts ?

OR

B) Explain Prim's And Kruskal's Algorithm?

15. A) Explain about Heap Sort with Example ?

OR

B) Write a Program by using Quick Sort?

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TENTATIVE SCHEME OF EVALUATION

COURSE: B.Sc., SUBJECT: COMPUTER SCIENCE 2018-19

PAPER-IV SEMESTER: IV

DATABASE MANAGEMENT SYSTEMS

Time: 2:30 Hours Max. Marks: 70 PART-A

**I. Answer the following questions in one or two sentences.** 5x2=10

1. What is Transaction?
2. What is Generalization?
3. What is Super key?
4. Define Trigger?
5. Define Aggregation?

## PART-B

**II. Answer any four questions from the following not exceeding 20 lines.** 4x5=20

6. Explain about Keys?
7. What is an Operator Explain Different types of Set Operators?
8. Write about GROUPBY?
9. Explain E-R MODEL ?
10. What is about Serializability?
11. Explain about BCNF.

## PART-C

**III. Answer the following questions not exceeding 40 lines** 4x10=40

12. A) Explain about Components of DBMS?

OR

B) What is Data Base? Explain its Advantages?

13. A) What is about VIEW ?

OR

B) Explain about SQL Command?

14. A) What is Normal Form? Explain 1NF, 2NFand 3NF?

OR

B) What is Specialization and Generalization?.

15. A) Define Deadlock? Explain Time stamp methods?

OR

B) Explain about Data Base Security?.

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**FACULTY OF SCIENCE**
**B.Sc III Year : SEMESTER –V 2018-19**
**Subject:- JAVA PROGRAMMING**
**PAPER-V MODEL PAPER**

Time 2 1/2 Hours | Max. Marks 70

## PART-A

**I. Answer the following question in one or two sentences** **5x 2 =10**

1) Explain about java features ?
2) Define Interfaces ?
3) Explain about Thread life cycle ?
4) What are types of Events ?
5) Write about an Execute Query ?

## PART-B

**II. Answer any four questions from the following not exceeding 20 lines** **4X5=20**

6) Define Array? Explain about One-Dimensional Arrays ?
7) Write about Final Keywords ?
8) Explain about Exceptional Handling.
9) What is Applet Class ?
10) What is Buffered input stream class explain it ?
11) Explain about Radio Buttons.

## PART-C

**III. Answer the following questions not exceeding 40 lines** **4X10=40**

12) A) Explain Method overloading ?

(OR)

B) Explain about Two-Dimensional Arrays ?

13) A) Explain about Access Protection ?

(OR)

B) Explain about User-defined Exception ?

14) A) Explain about Buffered output stream class ?

(OR)

B) How to implement the thread in run able interface ?

15) A) Expalin about the Swings ?

(OR)

B) Explain about establish connection?

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**FACULTY OF SCIENCE**
**B.Sc III Year : SEMESTER –V 2018-19**
**Subject:- OPERATING SYSTEM**
**PAPER-VI MODEL PAPER**

Time 2 1/2 Hours | Max. Marks 70

## PART-A

**I. Answer the following question in one or two sentences** **5x 2 =10**

1) What is process ?
2) Define Dead lock ?
3) Virtual Memory ?
4) Operating System ?
5) Thrashing ?

## PART-B

**II. Answer any four questions from the following not exceeding 20 lines** **4X5=20**

6) Explain about computer Architecture ?
7) Explain Handling Mechanism for Dead lock Explain ?
8) How to recovery from Deadlock explain ?
9) What is demand paging ?
10) What is file and explain its access method ?
11) Explain layered approach ?

## PART-C

**III. Answer the following questions not exceeding 40 lines** **4X10=40**

12) A) Explain O.S structure ?

(OR)

B) What is system call and Explain its type ?

13) A) Expalin any two scheduling Algorithm ?

(OR)

B) Explain Deadlock presentation and Avoidance ?

14) A) What is Virtual Memory ?

(OR)

B) What is Demand passing ?

15) A) What are the service of O.S ?

(OR)

B) Explain Free space Management ?

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**B.Sc III Year**
**SEMESTER-VI 2018-19**
**SUBJECT :- COMPUTER NETWORKING**
**PAPER-VII MODEL PAPER**

**Tim 2 1/2 Hours** **Max. Marks 70**

## PART-A

I) Answer the following question in one or two sentence 5×2=10

1) Define a Topologies ?
2) what is aCoaxial Cable ?
3) Define a Time –Division Multiplexing ?
4) Define a Flow control –stop-and-wait ?
5) What is a Token passing ?

## PART-B

II) Answer any four questions from the following not exceeding 20 lines 4×5=20

6) Explain about Categories of network ?
7) What Media-Satellite communication ?
8) Explain about Burst Error correction ?
9) Explain about Introduction to IEEE 802 ?
10) What is Repeaters ,Bridges ,Routers ?
11) Explain about Application layer ?

## PART-C

III) Answer the following question not exceeding 40 lines 4 ×10=40

12) A) Explain about Data communication components ?

(OR)

B) What is ISO Reference Model-layered Architecture ?

13) A) Explain about Frequency-Division Multiplexing?

(OR)

B) Write about Sliding Window ARQ Go-Back-n ARQ ?

14) A) What are Token Passing?

(OR)

B) Explain about Circuit Switching ?

15) A) Discuss about Connection Upper OSI layers ?

(OR)

B) Write about Distance Vector Routing Algorithm ?

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**B.Sc III Year**

**SEMESTER-VI 2018-19**

**SUBJECT :- WEB TECHNOLOGIES**

**PAPER-VIII MODEL PAPER**

**Time:2:30** **Max.Marks:70**

## PART-A

I) Answer the following question in one or two sentence 5×2=10

1) Define an Anchor tag ?
2) What is Table ?
3) Define an Event ?
4) Define An Hyperlink ?
5) Define a Multi frame ?

## PART-B

II) Answer any four questions from the following not exceeding 20 lines 4×5=20

6) Explain about Frames with example program ?
7) What is CSS and Explain it ?
8) Explain about Java script ?
9) Explain about a conditional statements in J.S?
10) What is Box model ?
11) Explain Formatting tags ?

## PART-C

III) Answer the following question not exceeding 40 lines 4 ×10=40

12) A) Explain about HTML ?

(OR)

B) What is Table ? explain with example program ?

13) A) Explain about Lists ?

(OR)

B) Explain about CSS properties ?

14) A) Explain about an Operators in J.S ?

(OR)

B) Explain about Built in Objects ?

15) A)Explain about Images in HTML ?

(OR)

B) Explain about a DOM ?

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**SKILLED ENHANCEMENT COURESES-III Semesters**

***EXTERNAL EXAMINATION PAPER-2018-19***

Time:2.30 Hrs. Max.Marks:40

SUBJECT :- **Computation Using Excel**

**Answer any FIVE of the following** 5X8=40

1) Explain about Excel function.

2) Explain about Excel tables.

3) Explain about Ribbon and Shortcut methods.

4) write about formatting alignments types.

5) Explain about DATE& TIME Functions.

6) Explain about text functions.

7) Write about Charts and Graphs in Excel.

8) Write about Mathematical function.

**SKILLED ENHANCEMENT COURESES-III Semesters**

***INTERNAL EXAMINATION PAPER-2018-19***

Time:50 min. Max.Marks:10

SUBJECT :- **Computation Using Excel**

**Answer any FIVE of the following** 5X2=10

1.Define cell.

2.Write about AutoFilter.

3.Write about print a worksheet

4.Write about short cut keys

5. Define formulas.

6.Define data.

7.Define lookup

8.Write a lower and upper commands in excel

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