Question Bank

Bachelor of Computer Application

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Computers Fundamental and PC Computing (BCA101)

UNIT-1

1. (a) Define Computer? Also explain the various features of computer system.
   (b) Explain in detail the history of computer; also explain the evolution process of it.

2. (a) Draw a block diagram of basic components of a computer system. Explain each component in detail.
   (b) Explain the various characteristics of computer system?

3. Explain the input and output devices with their full description.
4. Explain the types of various computers.
5. Convert the following Numbers.
   a) $(10101)_2 = (\ ?\ )_{10}$
   b) $(1110001)_2 = (\ ?\ )_{10}$
   c) $(62)_8 = (\ ?\ )_{10}$
   d) $(2085)_8 = (\ ?\ )_{10}$
   e) $(1CE)_{16} = (\ ?\ )_{10}$
   f) $(2AF)_{16} = (\ ?\ )_{10}$
6. Convert the following Number System.
   a) $(85)_{10} = (\ ?\ )_2$
   b) $(954)_{10} = (\ ?\ )_2$
   c) $(624)_{10} = (\ ?\ )_8$
   d) $(257)_{10} = (\ ?\ )_8$
   e) $(351)_{10} = (\ ?\ )_{16}$
   f) $(6812)_{16} = (\ ?\ )_{16}$

7. Convert the following Number System.
   a) $(534)_8 = (\ ?\ )_{16}$
   b) $(101011)_2 = (\ ?\ )_8$
   c) $(624)_8 = (\ ?\ )_2$
   d) $(11101)_2 = (\ ?\ )_8$
   e) $(3B1)_{16} = (\ ?\ )_2$
   f) $(AC2)_{16} = (\ ?\ )_8$

8. Convert the following Number System.
   a) $(110.111)_2 = (\ ?\ )_{10}$
   b) $(10.011)_2 = (\ ?\ )_{10}$
   c) $(12.5)_8 = (\ ?\ )_{10}$
   d) $(49)_8 = (\ ?\ )_{10}$

9. Perform the followings:
   a) $(110111)_2 + (111001)_2 = (\ ?\ )_2$
   b) $(11101)_2 + (110)_2 = (\ ?\ )_2$
   c) $(101101)_2 + (1001)_2 = (\ ?\ )_2$
   d) $(1011)_2 + (100011)_2 = (\ ?\ )_2$

10. Find decimal equivalent of following binary numbers:

(1) $(111111)_2 = (?)_{10}$

(ii) $(110100)_2 = (?)_{10}$

(iii) $(111000)_2 = (?)_{10}$

(iv) $(110101)_2 = (?)_{10}$

(v) $(101111)_2 = (?)_{10}$

(vi) $(101011)_2 = (?)_{10}$

UNIT-2

Q.1 Differentiate between the characteristic of primary and secondary memory of computer.

Q.2 Define the terms: Compiler, interpreter, Assembler, Loader, and Linker.

Q.3 Differentiate between High level , Machine & Assembly level language.

Q.4 What is Algorithm define it? Write algorithm for find factorial of a given number?

Q.5 What is flow chart? Draw a flow chart for find out maximum no. among three numbers.

Q.6 What is RAM & ROM? Differentiate between both.

Q.7 What is Cache Memory? How it reduce the mismatch of processor and main memory speed?

Q.8 Explain the magnetic Disk storage organization.

Q.9 Explain the storage organization of Compact Disk ROM.

Q.10 What is difference between Magnetic disk & Magnetic Tape?

UNIT-3

Q.1 Define the software. List and explain the types of software. Give two example of each category.

Q.2 What is an Operating System? Explain all the four types of operating systems.

Q.3 What is the difference between multitasking and multiprogramming operating system?

Q.4 What is input-output Device? Explain the role of input-output device in computer system.

Q.5 Explain the difference between impact & non-impact printer.

Q.6 Explain the printing mechanism of Laser printer.

Q.7 What is difference between Application & System Software?

Q.8 What is Batch operating system? Explain the difference between time sharing & batch operating system.

Q.9 Explain the different functions performed by the operating system.

Q.10 What is Real Time operating system?

UNIT-4

Q.1 What do you understand by computer network? Explain the different types of computer network.

Q.2 Compare between LAN, MAN & WAN network.

Q.3 What is network topology? Explain the different types of topology.

Q.4 What is protocol? Explain the TCP/IP protocol suite.

Q.5 Write four differences between each of the following:

a) Router and Gateway
b) Ring topology and Star topology

Q.6 What is communication media in Networking? List two physical communication media.

Q.7 Explain the difference between internet & intranet.

Q.8 What is an IP address? Explain the different classes of IP Address.

Q.9 Write short note on

a) DNS
b) ISP(internet service provider)
c) Web Search engine
d) firewall

Q.10 What is OSI model? Explain the different layers of OSI model

UNIT-5

Q.1 What is Word processor? Explain different features of word processing.

Q.2 What is Mail-Merge? Explain the different steps of mail merge.

Q.3 What is Electronic spread sheet? Explain different features.

Q.4 Explain the process of adding header & footer in word document and also putting page number.

Q.5 Sona oil mills had the following sales figures for the first two quarters of the year 2013

Sr.	ITEM	Q1 sales(liter)	Q2 sales(liter)
1	Mustard oil	1560	2345
2	Sesame oil	102	132
3	Groundnut oil	2023	1089
4	Coconut oil	754	432

What the different features are of excel with the help of which the sales performance of Q1 can be compared with that of Q2?

Q.6 Neha is the relationship manager of telecom company. Her manager wants her to maintain a database of all the customers of different district of rajasthan in a manner that she is able to provide the information to the manager genderwise, districtwise,localitywise and various other parameters quickly . Suggest tool from Microsoft Excel.

Q.7 What is power point presentation? Explain its advantages & features.

Q.8 What is the use of filter in ms-excel explain?

Q.9 What are the macros in ms-excel?

Q.10 Explain the different types of electronic spread sheet.

C Language (BCA- 102)

UNIT-1

Q.1 What are the various symbols used in flowchart? Draw their pictorial representation.

Q.2 Can there be more than one flowchart for a given problem? Write reasons for your answer.

Q.3 Any program is an algorithm, although the reserve is not true. Discuss this statement.

Q.4 What is an algorithm? What are the characteristics necessary for a sequence of instructions to qualify as an algorithm?

Q.5 How does a computer language differ from a natural language? Differentiate between assembly, machine and high-level language.

Q.6 List the main characteristic features of high-level languages. Name the five high-level languages.

Q.7 Five numbers denoted by the variables A, B, C, D and E are supplied as input. Draw a flowchart for an algorithm to print these numbers in descending order of magnitude.

Q.8 What are enumeration variables? How are they declared? What is the advantage of using them in a program?

Q.9 How do variables and symbolic names differ?

Q.10 What would be the value of x after execution of the following statements?

```
int x, y = 10;
char z = 'a';
x = y + z;
```

UNIT-2

Q.1 Explain different types of operators used in C language with suitable examples.

Q.2 Write short note on:

a) Type conversion
b) Operator precedence

Q.3 Which of the following arithmetic expressions are valid? If valid, give the value of the expression; otherwise give reason:

a) 25/3 %2
b) 15.25 + - 5.0
c) 21 % (int)4.5
d) (5/3)*3 + 5%3

Q.4 Determine the value of each of the following logical expression if a=5,b=10 and c= -6

a) a>b && a<c
b) a<b && a>c
c) b>15 && c<0 ||a>0
d) (a/2.0 ==0.0 && b/2.0 !=0.0)|| c<0.0

Q.5 Write short note on:

a) Break statement
b) Continue and go to statement

c) Unary and binary operator
d) Control statement

Q.6 What is an array? Explain different types of array with suitable example.

Q.7 Write a program to find the number of and sum of all integers greater than 100 and less than 200 that are divisible by 7.Given a number, write a program using while loop to reverse the digits of the number.

Q.8 Write program to print the following outputs using for loops.

1
2 2
3 3 3
4 4 4 4
5 5 5 5 5

Q.9 What is 2-D array? How to declare 2- D array?

Q.10 How would you decide the use of one of three loops in C for a given problem?

UNIT-3

Q.1 Describe the limitations of using getchar and scanf functions for reading.

Q.2 Character strings in C are automatically terminated by the null character. Explain how this feature helps in string manipulations.

Q.3 Explain different String- Handling Functions used in String.

Q.4 Write a program in C language to print a string and copy into another string.

Q.5 Describe Arithmetic operations which are used on characters.

Q.6 What do you understand by user- defined functions? Explain need for user-defined functions.

Q.7 Write short note on:

a) External and static variables
b) Recursions
c) Passing arguments

Q.8 Write a multifunction to illustrate how automatic variables work.

Q.9 Distinguish the following

a) Global and local variables
b) Automatic and static variables

Q.10 Write a function Prime that returns 1 if it's argument is a prime number and returns zero otherwise.

UNIT-4

Q.1 What is pointer? How is a pointer initialized?

Q.2 Describe typical applications of pointers in developing programs.

Q.3 Explain

a) Chain of pointer
b) Operations on pointers
c) Arrays of pointer
d) Pointers and structure

Q.4 Given the following declarations:

```
int x=10, y=10;
```

int *p1 = &x, *p2 = &y;
What is the value of each of the following expressions?

a) (*p1)++
b) –(*p2)
c) *p1 + (*p2)--
d) ++(*p2)- *p1

Q.5 Write a program to print the address of a variable along with its value.

Q.6 What is dynamic memory allocation? How does it help in building complex programs?

Q.7 What is the principal difference between the functions malloc and calloc.

Q.8 Write a program that uses a table of integers whose size will be specified interactively at run time.

Q.9 Write short note on:

a) Releasing the used space: Free
b) Altering the size of a block: Realloc

Q.10 Find errors, if any, in the following memory management statements:

a) *ptr = (int *)malloc(m, sizeof(int));
b) node= free(ptr);
c) table= (float *)calloc (100);

UNIT-5

Q.1 What is structure? How it is differ from an array/

Q.2 Describe operations on structure.

Q.3 Explain in brief with example:

a) declaring structure variables
b) accessing structure variables
c) size of structure

Q.4 Differentiate between structure and unions.

Q.5 Write a program to illustrate the comparison of structure variables.

Q.6 How does an append mode differ from a write mode?

Q.7 Distinguish between the following functions:

a) getc and getchar
b) printf and fprintf

Q.8 Describe the use and limitations of the functions getc and putc.

Q.9 When a program is terminated, all the files used by it are automatically closed. Why is it then necessary to close a file during execution of th program?

Q.10 Write a program that reads a file containing integers and appends at its end the sum of all the integers.

Basics of Internet Programming (BCA-104)

Unit-1

1. What types of domains are available?
2. List the advantages of E-Mail.
3. How to avoid the E-Mail viruses?
4. List the various E-mail error messages.
5. Explain WWW.
6. Name the few protocols used for Email on the internet.
7. What is meant by web server? Give examples.
8. Define web browser.
9. Explain various kind of web browser.
10. What are the search engines.

Unit-2

1. What is html?
2. Write history of html
3. Write down the structure of html page.
4. Describe various kind of list used in html.
5. What is hyperlink? How to create it.
6. How to use paragraph tag.
7. How to use font tag.
8. Prepare a sample code to illustrate three types of lists in HTML.
9. Write a HTML code to create the feedback form.
10. What is the correct HTML tag for inserting a line break?

Unit-3

1. What is table? Write structure of table.
2. How to perform sizing of table. Describe with proper example.
3. How to create border in html. Describe with proper example.
4. How to set align of text and table. Describe with proper example.

5. How to set color for table and cells. Describe with proper example.
6. How to perform row spanning.
7. How to perform column spanning.
8. How to perform grouping of rows and column.
9. Write a HTML code to create the feedback form.
10. Write short notes on JavaScript control structures.

Unit-4

1. What is form? Describe all its function.
2. What are the essential elements of form?
3. Describe the use of control variable with proper example.
4. What are the frames?
5. How to use frame border? Define with example.
6. Write a java script program to add two numbers.
7. Write a java script program to find the factorial of given number.
8. Write a java Script program to print all prime numbers.
9. What is linked window?
10. Create a html code with the use of linked window.

Unit-5

1. What are style sheets? List out the advantages.
2. List down the ways of including style information in a document.
3. Define cascading.
4. What is the purpose of using external style sheets?
5. What are the style precedence rules when using multiple approaches?
6. List down the font characteristics permitted in style sheets. Write a note on content positioning characteristic visibility?
7. Define DTD?
8. What are the events triggered during mouse action?
9. List the events associated with web page?
10. What does DHMTL refer?

Principles of Management (BCA106)

UNIT-1

Q.1 Define management and discuss its essential features.
Q.2 What are skills and skill mixture which manager at different levels required.
Q.3 Explain the five 'M' of management.
Q.4 Explains different characteristics of management.
Q.5 Differentiate between management and administration.
Q.6 Explain different level of management.
Q.7 "management is the art of getting thing done through and with people" explain.
Q.8 Is management a profession? Give argument for and against professional of management.
Q.9 classifies the different managerial functions.
Q.10 Coordination is the very essence of management" do you agree give reasons.

UNIT-2

Q.11 Explain the different functional areas of management.
Q.12 Explain the difference between coordination and cooperation.
Q.13 What are the need and significance of coordination?
Q.14 Discuss the system approach to management.
Q.15 Write short note on human relation approach to management.
Q.16 Briefly explains the behavioural science approach to the study of management thought.
Q.17 Explain the neo classical approach used in management thought.
Q.18 Briefly explain the significance and limitations of the system approach.
Q.19 Define the planning according to 'Theo Haimann'.explain different characteristics of planning.
Q.20 Briefly describe the various importance of planning.

UNIT-3

Q.21 Explain the limitation of planning .Why planning may fail?
Q.22 Explain the different principles of planning.
Q.23 Describe the different steps of planning.
Q.24 Distinguish between polices and strategies.
Q.25 What is policy? State its importance in management .enumerate the different steps in the process of policy formulation.
Q.26 Define the MBO according to 'John W.humble'. Explain the different characteristics of MBO
Q.27 Explain the different steps of MBO process.
Q.28 Explain the different steps of decision making process.
Q.29 Explain the advantage and disadvantages of group decision making.
Q.30 Explain the limits of rational decision making.

UNIT-4

Q.31 Explain the concept and nature of organisation.

Q.32 Explain the process of organising. Discuss the significance of a sound organisation in the successful running of a business enterprise.

Q.33 What are the characteristics if organisation? Why is an organisation structure necessary?

Q.34 Define authority and explains the source of authority.

Q.35 Why is it necessary to delegate authority? Explains the obstacles in the process of delegation. What steps help in achieving effective delegation?

Q.36 Distinguish between delegation and decentralisation. What are the limitations of decentralisation?

Q.37 Define decentralisation of authority? What obstacles stand in the way of effective delegation of authority?

Q.38 What do mean by departmentation? Describe the base of departmentation in brief.

Q.39 What are the characteristics and limitation of informal organisation?

Q.40 What is informal organisation? Explain its benefits and limitations.

UNIT-5

Q.41 Define the term 'span of control'. Why is proper span of control necessary?

Q.42 Discuss the factor determining the span of control.

Q.43 Explain various types of staff.

Q.44 Define the staffing and explain its characteristics.

Q.45 Explain the concept and nature of staffing.

Q.46 Discuss the elements of staffing.

Q.47 Explain the importance of controlling in management.

Q.48 Define controlling. Explain the essential requirement of an effective control system.

Q.49 What is control? Discuss its importance and how does it help in improving performance of employee.

Q.50 Briefly explain the relationship between planning and control.

Operating System (BCA 202)

UNIT – 1

1. What is an Operating system? Why is the Operating System viewed as a resource allocator and control program?
2. What is the main advantage of an operating system? Describe the functions of operating system in detail.
3. What are the Kernel and Batch systems? Explain the advantage of Multiprogramming?
4. What do you understand by Time-sharing systems? Describe the advantage of time sharing system.
5. What are multiprocessor systems? Define the different types of multiprocessing with their advantages?
6. Explain about the system calls in detail. What are the system components of an operating system? Explain them.
7. (a) Explain the basic features of UNIX as an operating system.
   (b) Discuss briefly about Batch Processing Systems.
8. Discuss in detail the various services provided by the OS?
9. What is a real time system? What is the difference between hard real time system and soft real time system?
10. Define the essential properties of the following types of OS.
    (a) Batch system
    (b) Multiprocessing system
    (c) Time-sharing system
11. (a) What is the difference between distributed system and real time system?

    (b) What is the difference between personal computer system and parallel system?

12. (a) Explain how protection is provided for the hardware resources by the operating system.

    (b) What are the system components of an operating system and explain them?

UNIT – 2

1. Explain how operating system services are provided by system calls. Explain the various system calls.
2. Describe the structure of operating system. Explain the important modules of an operating system.
3. Write short notes on:-
   (a) System Calls
   (b) System Programs
   (c) Virtual Machines
4. Explain the services provided by operating systems to programs and to the users of program.
5. Explain the various components of a system in system structure.
6. What do you understand by virtual machines? Describe the functionality of virtual machines.
7. What is the need for system calls? Explain the Explain the important services of an operating system.
8. Describe the file system in the Unix Operating system in detail.

UNIT – 3

1. What do you mean by a process? Distinguish between preemptive and non preemptive scheduling. Explain each type with an example.
2. Compute average turnaround time and average waiting time for the following scheduling methods.
   (a) FIFO

   (b) SJF

   (c) Round robin (quantum = 2ns).

Process	Burst time (ns)	Arrival time
P1	4	2
P2	2	1

P3	**5**	**1**
P4	**3**	**3**

Draw the Gantt charts for the above scheduling methods.

3. Consider the following set of processes, with the CPU burst time given in milliseconds.

Process	Burst Time
P1	**10**
P2	**29**
P3	**3**
P4	**7**
P5	**12**

Consider FCFS, Non-preemptive SJF, RR (quantum = 10 ms) scheduling algorithms. Illustrate scheduling using Gantt chart. Calculate their waiting time and average waiting time.

4. Consider the following set of processes, with the length of the CPU-burst time given in milliseconds:

Process	Burst time	Priority
P1	**10**	**3**
P2	**1**	**1**
P3	**2**	**3**
P4	**1**	**4**
P5	**5**	**2**

Processes are arrived in P1, P2, P3, P4, P5 order of all at time 0. Draw Gantt charts to show execution using FCFS, SJF, non-preemptive priority (lower number implies higher priority)

and RR (time quantum = 1) scheduling. Also calculate waiting and turnaround time of each process for each one of the above scheduling algorithms.

5. Explain FCFS, SJF, a non-preemptive priority and RR scheduling algorithm by considering four processes with burst time and priority. Compare the turn around and waiting times of each process for each of the above scheduling Algorithms.
6. Explain in detail how semaphores and monitors are used to solve the Dining-Philosopher problem.
7. Discuss the monitor solution for Dining Philosopher problem. Explain the Peterson's solution for process synchronization.
8. Explain briefly any four scheduling algorithms with examples.
9. Discuss in detail the critical section problem and also write the algorithm for readers-writers problem with semaphore.
10. Discuss briefly the various issues involved in implementing Inter process communication (IPC) in message passing system.
11. Explain the following CPU scheduling algorithm with an example.
    (a) Round Robin
    (b) Shortest Job First
    (c) Priority Scheduling
12. Write short notes on:-
    (a) Process
    (b) Process State
    (c) Process Control Block
13. What is meant by process? Discuss the concept of process. Explain the operation of process in detail.

UNIT – 4

1. Describe the four necessary conditions for deadlocks to occur. Explain Banker's algorithm for deadlock avoidance.
2. What are the techniques involved in deadlock detection? Explain the deadlock recovery methods.

3. Two phase locking can lead to starvation. Explain how this can happen. Explain why deadlock is not possible?
4. Explain the various strategies for dealing with the deadlocks namely prevention, avoidance and recovery?
5. What is the difference between deadlock and starvation? Discuss the necessary conditions for deadlock.
6. What do you understand by system model? Explain the characteristics of deadlock.
7. Write short notes on:-
   (a) Deadlock Detection
   (b) Deadlock Avoidance
   (c) Deadlock Prevention
8. Explain the two solutions of recovery from deadlock.

UNIT – 5

1. What do you understand by memory management? Differentiate between logical address spaces and physical address space.
2. (a) Explain about the basic concepts of paging and segmentation in memory management.
   (b) Explain the swapping and contiguous allocation in memory management.
3. Explain the LRU approximation page replacement algorithms.
4. Consider the following page-reference string
   1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6

   How many page faults would occur for the following replacement algorithms, assuming three frames? Remember all frames are initially empty.

   (a) FIFO replacement

   (b) LRU replacement

   (c) Optimal replacement

5. (a) Explain any two-page replacement algorithms.
   (b) Explain the concept of demand paging and the performance issues of demand paging?
6. Discuss how virtual memory is managed? Describe the performances issues of secondary storage management in detail?

7. Explain in detail how the file system is implemented? Explain how sharing of pages can be achieved.
8. Describe the consequence of multiprogramming with fixed partitioning and variable partitioning. Also explain the swapping process.
9. Explain how memory can be dynamically allocated using first fit, best fit, and worst fit strategies.
10. (a) Discuss the salient features and merits of multilevel paging and inverted page tables.
    (b) Explain in detail about External and Internal fragmentation.
11. What is virtual memory? What are the major problems to implement demand paging?
12. What is a file? What are the various file operations? What are the different accessing methods of a file?
13. What is Directory? What are the operations that can be performed on a directory?
14. What is the cause of thrashing? How does the system detect thrashing? Once it
15. What are the most common schemes for defining the logical structure of a directory?

System Analysis & Design(BCA 203)

UNIT – 1

1. Define system,subsystem and components of a system with suitable diagram.
2. What are the characteristics of a good information system?
3. What are the elements of a system? Can you have a visible system without feedback? Explain.
4. What are the various types of systems exists in environment. Briefly describe them.
5. What are the various problem in system development? Explain it.
6. How do you model the system architecture? Explain completely with diagrams.
7. When does on analyst terminate a project? How does it tie in with post implementation? Explain.
8. What is the role & responsibilities of system analyst? Explain.
9. Write short note on Physical and abstract system.
10. Distinguish between open and closed systems.

UNIT – 2

1. What is System Development Life Cycle(SDLC). Explain its Phases.
2. Explain Water fall Model. What are the problems that are sometimes encountered when the waterfall model is applied?
3. What is a prototype model? Under what circumstances is it beneficial to construct a prototype model?
4. Describe the Spiral Model of software development with strength, weakness. also give the reason for using Spiral Model.
5. Explain the Evolutionary Model. What are the Advantages and Disadvantages?
6. Explain the Incremental Model. What are the Advantages and Disadvantages?
7. What are the various activities in WINWIN Spiral Model? Explain.
8. Explain the feasibility studies. What are the outcomes? Does it have either implicit or explicit effects on software requirement collection?
9. Draw a translating diagram for analysis model into a software design. Briefabout each translations.
10. Explain post implementation and maintenance phase of SDLC model.

UNIT – 3

1. Why requirement analysis is important in development of a software? Describe analysis principles in details.
2. Define Requirement Analysis. Write Requirement Analysis principles. Also Explain FAST & DFD Techniques of Requirement Analysis.
3. Differentiate functional and non functional requirements and explain.
4. Describe the primary difference between structured analysis and object oriented analysis.

5. Draw the Data flow diagram for library/banking management system. Clearly describe the working of the system.
6. What is the use of context diagram? Draw a Level-1 DFD and STD for photocopier software.
7. What is Data dictionary? And explain data modeling.
8. Write short note on Decision table.
9. What is decision tree explain with example.
10. Discuss in detail the basic structure of analysis model.

UNIT – 4

1. Explain the fundamental software design concepts in detail.
2. Draw a translating diagram for analysis model into a software design. Brief about each translations.

3. Define Cohesion and Coupling in the context of design. Also explain different type of Cohesion and Coupling used in modular design.
4. What is the difference between Function-Oriented Design and Object-Oriented Design ?
5. Explain about the various design concepts considered during design?
6. Write short notes on user interface design process?
7. Explain data architectural and procedural design for a software.
8. Draw an ER diagram for university information System.
9. Explain all type of file structure with suitable diagram.
10. Write short notes on importance of file structure and organization.

UNIT – 5

1. What is forms design. Explain all type of forms design method.
2. Explain user interface design in detail.
3. What do you mean by Software Testing? Why it's required? Also explain different type of testing techniques.
4. Explain Unit Testing & Integration Testing with suitable diagram.
5. Explain the testing objectives and its principles.
6. What are the attributes of the good test? Explain the test case design.
7. What is system testing. Why we need system testing explain.
8. Explain all types of system testing with example.
9. Write short notes on System Maintenance.
10. Write short notes on role of education & training in system design.

Basics of Internet Programming (BCA 204)

UNIT – 1

1) Define the web browser? Explain the features of various web browsers.

2) Illustrate some examples of search engines.

3) Describe the electronic mail process?

4) Explain the working of Web servers?

5) What do you understand by Uniform resource locators (URL)?

6) Explain the working of Electronic mail?

7) Differentiate the internet, intranet and extranet?

8) Describe the WWW and explain how it was introduced?

9) Differentiate the LAN, MAN and WAN?

10) Explain the use of internet in social media?

UNIT – 2

1) Describe the history of HTML.

2) Explain <HTML><HEAD><TITLE><BODY> tags.

3) Write a simple program in HTML.

4) Explain different types of lists in HTML.

5) Write a program to print the ordered list in HTML.

6) Explain different tags used in HTML?

7) Explain the font tags used in HTML?

8) Write a program to print the unordered list in HTML.

9) Write a program to print the definition list in HTML.

10)How we can create different types of Links in HTML?

UNIT – 3

1) Describe the HTML tags used for create a table?

2) Create a table in html which include the name, university, roll no, mobile no in table header.

3) Create the following table in html

First Name	Last Name	Points
Jill	Smith	50
Eve	Jackson	94
John	Doe	80
Adam	Johnson	67

4) Create the following table in html

Header 1	Header 2
row 1, cell 1	row 1, cell 2
row 2, cell 1	row 2, cell 2

5) Explain the HTML Table Tags with examples.

6) What is the output of following program-

```
 table border="1">
<tr>
<th>bca</th>
<th>mca</th>
</tr>
<tr>
<td> rahul </td>
<td>shyam</td>
</tr>
<tr>
<td>ram</td>
<td>shyam</td>
</tr>
</table>
```

7) Explain the Grouping and aligning rows and columns in HTML?

8) How you can Aligning your table contents?

9) Give the example to illustrates the order and structure of table heads, feet, and bodies?\

10) Create the following table in html

Name	Cups	Type of Coffee	Sugar?
T. Sexton	10	Espresso	No
J. Dinnen	5	Decaf	Yes

UNIT – 4

1) Explain the Frames in reference of HTML.

2) Design an attractive Form in HTML?

3) Explain the Linked window.

4) Create your resume or CV using HTML.

5) Explain the working and output of -

```
<form action="demo_form.asp" method="get" target="_blank">
  First name: <input type="text" name="fname"><br>
  Last name: <input type="text" name="lname"><br>
  <input type="submit" value="Submit">
</form>
```

6) Explain the Form attributes in HTML.

7) What are frames? Explain with example.

8) Describe the Displaying control labels in HTML.

9) Write the html code to print this type of form-

Name: Email:

10) Differentiate the form and frames?

UNIT – 5

1) Describe the advantages and disadvantages of DHTML.

2) Explain the DHTML and CSS styles for web page creations.

3) Describe the following briefly-

a) Style sheets.

b) DHTML

c) Tag for create link in HTML.

4) What is DHTML? What are the features of DHTML?

5) Explain the Working of DHTML ?

6) What are technologies we use in DHTML? Explain their significance in DHTML application?

7) Explain how to handle events with DHTML

8) How is FontSize and Font Size differ in DHTML?

9) What is logic match tag? Explain with example.

10) Describe the basic steps used to create a tiles application in DHTML?

Subject: Linux

Subject Code: BCA205

UNIT-1

Q.1 What is Linux? What is the role of the free software foundation in the development of Linux? Who developed Linux kernel?

Q.2 Explain the different features of Linux operating system.

Q.3 What are the various Linux distributions? Explain.

Q.4 Explain what are the main differences between Linux & UNIX?

Q.5 How to install Linux? What are different types of installation media? Explain

Q.6 Explain the kernel architecture of Linux.

Q.7 Explain the process control of Linux system.

Q.8 What is system call? Explain different types of system calls in Linux.

Q.9 Explain the different steps of process management in Linux operating system.

Q.10 What is Device Driver? How these implemented in Linux operating system?

UNIT-2

Q.1 Discuss in detail? File system hierarchy of Linux.

Q.2 Explain the different file attributes of Linux file system.

Q.3 Use chmod –w and then try to create and remove a file in current directory?

Q.4 what is the use of chmod command explain in detail?

Q.5 Explain the mounting file system of Linux in detail?

Q.6 What is the use of file permission? Explain different types of file permission in deatail.

Q.7 Explain the EXT2 inode file system in detail.

Q.8 What is file & record locking? Explain different type of locking.

Q.9 What is shell? Explain different type of shell in Linux.

Q.10 When the shell finds metacharacter in the command line what does it do? When command is finally executed?

UNIT-3

Q.1 What is process? How is a process created? Mention briefly the role of the fork-exec mechanism in process creation.

Q.2 What are signals? name a way of generating a signal from the keyboard. Why should we use *kill* with signal names rather than their numbers.

Q.3 What is Zombie process, and how it is killed?

Q.4 What is inter process communication? Explain different types of IPC in detail.

Q.5 Compare between Message passing and shared memory communication in detail.

Q.6 Describe the functions of process management in Linux operating system?

Q.7 What is pipe command? what happens when you use (i) cat > foo if foo contains data, (ii) who >> foo if foo doesnot exist,(iii) cat foo > foo (iv) echo 1>foo?

Q.8 What are semaphores? Explain Linux semaphore data structure.

Q.9 Explain three tier client-server architecture of Linux server in detail?

Q.10 Explain

a) Mention the similarities between processes and files
b) Name five important process attributes that are inherited by the child from its parents
c) What is difference between a process run with & one run with nohup?

UNIT-4

Q.1 What is thread? What are the differences between process and thread?

Q.2 What is multithreaded programming? Describe its various benefits.

Q.3 Describe multithreaded server architecture with diagram?

Q.4 Explain the different types of multithreading model of Linux?

Q.5 Explain the different types of thread calls in Linux.

Q.6 Explain different types of attributes of thread?

Q.7 What is Mutex? How it is used to avoid deadlock explain with example?

Q.8 Explain the process control block in Linux?

Q.9 What is thread synchronization? how Semaphores are used in synchronization explain in detail?

Q.10 Write short note on

a) POSIX
b) Pthreads
c) API

System Software (BCA206)

UNIT – 1

1. What do you understand by Machine languages? Explain with suitable example.
2. Compare the advantages and disadvantages of machine language, assembly language, and high level language.
3. Give the internal and external representation of instruction and data.
4. How to calculate the effective address in instruction? Explain the various addressing modes.
5. Define system software in detail.
6. Explain the various types of system software.
7. What is the role operating system?
8. How data are represented and stored in instruction and memory? Discus instruction formats.
9. Explain search and data allocation structures.
10. Explain different addressing modes.
11. What are advantages of high level language?
12. Differentiate assembler with and compiler.

UNIT – 2

13. Explain the use of Assembler.
14. Write assembly code for addition of two numbers.
15. What is pass of an assembler? Explain the two passes of a two pass Assembler.
16. Convert following assembly language program into machine language program using 2-pass assembler. Show the contents of data structures used also.

```
START   101
READ    N
MOVER   BREG, ONE
MOVEM   BREG, TERM
AGAIN   MULT    BREG, TERM
MOVER   CREG, TERM
ADD     CREG, ONE
MOVEM   CREG, TERM
COMP    CREG, N
BC      LE, AGAIN
MOVEM   BREG, RESULT
```

```
PRINT     RESULT
STOP
N         DS        1
RESULT    DS        1
ONE       DC        '1'
TERM      DS        1
          END
```

Assume your own instruction opcodes.

17. For the program given in previous question, write OPTAB, SYMTAB, LITTAB and POOLTAB.
18. What are the functions of the analysis and synthesis phase of the assembler?
19. Write algorithm for Pass-1 of a 2-pass assembler.
20. An assembler provides a user option by which it prints separate list of the following:
    a) Labels of instruction
    b) Labels of DC statements
    c) Label of DS statements

    Would you recommend use of single symbol table or three different symbol tables for this purpose? Justify your answer.

21. Write short notes on:
    a) Lexical Syntax
    b) Semantic Analysis.

22. Write short notes on:
    a) Software tools
    b) Symbol tables.

23. Explain pass structure of assembler.
24. What do you mean by assembler directives?
25. Describer instruction format of arithmetic and control transfer statement.

UNIT – 3

26. Define Bootstrap, absolute and re-locatable loaders.
27. Differentiate between loader and linker
28. A programmer loads a successfully compiled program to run it but forgets to use one system software package. When it runes the program, he finds errors when program tries to generate

graphics indicating that graphic file from library is missing. Which package is missing? Explain this package in detail.

29. Explain Relocatable loader.
30. What is a loader? Compare the COM files in MS DOS with OBJ and EXE files.
31. Discuss case study of MS-DOS Linker.
32. Explain the design of bootstrap, absolute and relocatable loaders.
33. Explain the algorithm for pass 2 of a linking loader.
34. What is assembler? Explain the difference between one pass assembler and multi pass assembler.
35. Write a assembly code for addition of two no. and explain features of assembler.
36. Explain design of linker.
37. What is an external reference? How the external symbols are resolved?
38. What is relocation factor (RF)? How it is important to reallocate a program?

UNIT – 4

39. What are the fundamental constituents of a HLL programming language grammar?
40. What is an overlay structured program? Explain execution of an overlay structured program.
41. What is lexical ambiguity? How it is resolved explain?
42. What is parsing? Explain.
43. Explain lexical analysis.
44. What is symbol table management? Explain the working of symbol table management.
45. Discuss how to design symbol table and explain various data structure used.
46. Explain classification of tokens.
47. Write short note on

    (a) parse trees

    (b) overflow technique

48. Write short note on

    (a) Operator precedence parsing

    (b) lexical ambiguity

49. What do you understand by compilers?
50. What are the various phases of compilers?
51. Write short note on system software tool.

Data Structure & Algorithms (BCA 301)

UNIT – 1

1. What is data Structure? Explain type of data structure and operations which are performed on data structure.

2. What is an array? Explain the row major and column major representation of arrays. Give address calculation formula for each with example.

3. Define Data Structure? Explain the difference between primitive data structure and non primitive data structure.

4. Define the areas in which data structures are applied extensively?

5. Define the complexity of an algorithm. What is meant by time space trade-off?

6. What is the data structures used to perform recursion? Distinguish between a program and an algorithm.

7. What do you understand by Sparse matrix? Differentiate linear and non linear data structure.

8. How the Algorithms play important role in Data Structure.

9. Explain the complexity and the Asymptotic Notation of Algorithms?

10. What do you understand by best, worst and average case analysis of an algorithim?

11. Describe the Binary search and Sequential Search with their complexity.

12. (a) Describe the Stack and Queue with suitable examples.

    (b) Distinguish between Time and Space Complexity.

13. Write short notes on:

    (a) Storage Structure
    (b) Recursion
    (c) O notation
    (d) Sparse Tree

14 (a) Write an algorithm for postfix expression evaluation.
   (b) Transform the following postfix expression into prefix expression.

A, B, C, +, *, D, E, /, -

15. (a) Write an algorithm for transforming infix expression into postfix expression.
    (b) Consider the following arithmetic infix expression Q:
        A + (B * C – (D / E ↑ F) * G) * H

    Transform it into its equivalent postfix expression P.

16. Write Algorithms for conversion of infix expression into postfix conversion.
17. convert the following expression into postfix
        A*(B+D)/E-F*(G+H/K)

18. Evaluate the following expression which is in postfix
        12, 7, 3,-, /, 2, 1, 5, + , *, +

19. (a)Explain the stack with its operations?
    (b) Describe the Priority queue with example?

20. Explain the Tower of Hanoi problem with algorithms.
21. What are the notations used in Evaluation of Arithmetic Expressions using prefix and postfix forms?
22. Convert the expression ((A + B) * C – (D – E) ^ (F + G)) to equivalent Prefix and Postfix notations.
23. (a) What do you understand by Queue and Deque?

    (b) Explain push () and pop () operations in stack using any suitable example.

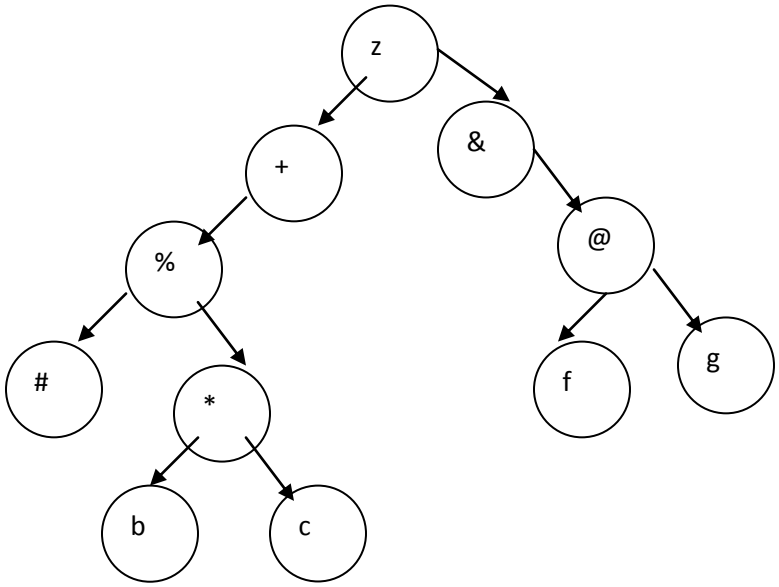
UNIT – 2

1. What is linked list? How it is different from array? Explain the different types of linked list.
2. Describe the advantages of linked lists over arrays.
3. What is difference between the singly and doubly link list. Mention the significance of a circular linked list.
4. What is doubly linked list? What advantages does a doubly linked list have over linear linked lists?
5. How a linked list can be used to represent a polynomial of type:-
6. 9x2y2-8xy2+10xy+9y2
7. Describe the applications of linked list on polynomial Expressions.
8. Describe the operations are performed on Circular Linked List.
9. Explain the advantages and disadvantages of linked list.
10. Explain the operations are performed on the singly linked list.

UNIT – 3

1. (a) What do you understand by Binary Tree? Define the complete binary tree.
   (b) Compare the contrast between a binary and binary search tree.

2. Find the preorder, post order and in order of the following binary tree



3. Write an algorithm for preorder traversal in binary tree.
4. Write an algorithm for find the location of a given item in BST.
5. (a) Differentiate the B tree and B+ tree.
   (b) Which of the operation on BST is more complex and Why?

6. There are 8, 15, 13, 14 nodes were there in 4 different trees. Which of them could have formed a full binary tree?

7. In the given binary tree, using array you can store the node 4 at which location?
8. (a) Explain the multi way trees?
   (b) What do you understand AVL tree

9. Suppose the following list of numbers is inserted into an empty BST. Draw the resulting tree.
   20, 10, 18, 4, 8, 5, 13, 16, 17, 1, 27

10. How an AVL Tree differs from a BST? How AVL trees are represented in computer memory?

11. (a) In what way is an AVL tree better than a binary Tree?
    (b) Describe the AVL trees insertion and deletion method.

UNIT – 4

1. Explain the BFS (Breadth First Search) with example.
2. Explain the DFS (Depth First Search) with example.
3. Explain the minimum Spanning Tree.
4. Write the Prim's Algorithm for minimum Spanning tree.
5. Write the Krushkal's Algorithm for minimum Spanning tree.
6. Explain the shortest path algorithms.
7. Explain the Warshall's Algorithm.
8. Explain the Adjacency matrix with example.
9. Explain the Adjacency list with example.
10. Explain single source path problem with example.
11. Explain multi source path problem.
12. What do you mean by graph? Describe the representation of graph in memory.

UNIT – 5

1. What do you mean by the term sorting? Define the different types of sorting techniques.
2. Explain the Bubble Sort with algorithms.
3. Explain the Quick Sort with algorithms.
4. Sort the following using Heap Sort.
   25, 30, 59, 10, 92, 85, 30
5. Explain the Insertion Sort with algorithms.
6. Explain Selection Sort with algorithms.
7. Explain Hashing techniques and symbol table.
8. What do you understand by merging? Write the Merge Sort with their complexity analysis.
9. Explain the Radix sort with algorithms.
10. Explain the Selection and Insertion Search method?

Data Base Management System (BCA 302)

UNIT – 1

1. What is Database Management System? Explain the features of Data Base Management System.
2. Discuss the main characteristics of the database approach and how it is differs from file processing system
3. Explain the Data Models in DBMS. Describe Advantages and Disadvantages of DBMS.
4. What are the various functional components of a database system? Draw the overall structure of DBMS
5. What do you understand by data abstraction? Discuss the three levels of data abstraction.
6. What is data independence? Explain the difference between logical data independence and physical data independence?
7. What is difference between Data processing and Data management System?
8. What do you understand by DBA? Explain the responsibilities of DBA?
9. What is Data Base Management System? Explain the Architecture of DBMS?
10. Describe Database Languages DDL and DML and DCL.

UNIT – 2

1. What is Entity Relationship Model? Explain its symbols using suitable example.
2. Explain the followings terms in respect to E-R Diagram:-
   (a) Binary versus Ternary relationship
   (b) Weak Entity Set
   (c) Single valued or Multi valued Attributes
   (d) Relational Data Models
3. Explain the following terms in respect to E-R diagram with suitable examples:-
   (a) Entity and Attributes

   (b) Relationship and Relationship sets

   (c) Key Constriants.

4. Describe the Candidate Key, Primary Key and super key? How Primary Key is different from foreign key.
5. Draw an E-R diagram for a Banking enterprise and University management system.
6. Draw an E-R diagram for Airline Schema and Library Management System.
7. Explain the Hierarchical Data Base Structure and Network Data Base Model.
8. Create an E-R Model Using following data:-

Consider the following tables:
Employee (Emp_no, Name, Emp_city, Emp Address)
Company (Emp_no, Company_name, Salary, department)

9. What is E-R modeling? Explain the several types of the relationship in E-R Model.
10. Describe the Data Manipulation in a Network Database and Draw an E-R Diagram for Hospital Management.

UNIT – 3

1. What is Relational algebra? Explain various relational algebra operators with suitable example.

2. Differentiate between Cartesian product and Natural join operations used in relational algebra.

3. Describe the SELECT and PROJECT operation using example in relational algebra.

4. Describe the UNION and INTERSECTION Operation using suitable example.

5. Describe the Circumstances when you would use each of the following relational Algebra

Operations

a) SELECT

b) PROJECT

c) JOIN

d) DIVISION

6. What is Normalization? Explain the various Normalization Techniques with suitable example.

7. Write short notes on followings

(a) RENAME operator

(b) DIFFERENCE

(C) CARTESIAN- PRODUCT

8. Define the Normalization? Explain 1NF, 2NF, 3NF and BCNF with simple example.

9. What is Functional Dependency? Explain normalization techniques using functional dependencies with example.

10. Describe the Loss Less Join and Preserving decomposition Dependency.

UNIT – 4

1. What do you understand by backup and recovery? How you can recover data from catastrophic failures?

2. Describe the concurrency control technique and Recovery technique?

3. Define the locking techniques for concurrency control. Distinguish between Shared and Exclusive locks.

4. Define two phase locking and distinguish between static, dynamic locking and strict two phase locking.

5. What are different types of locks? Distinguish between them.

6. What is database recovery? Why backups are important in transaction management?

7. Distinguish between rigorous locking and strict two phase locking.

8. What are the concurrency control schemes? Describe the Multi-version Concurrency Control Technique.

9. What do you mean by rollback in transaction? Explain the Granularity of Data Items.

10. Define the security and authorization in data base. Explain the Time Stamp protocol.

UNIT – 5

1. What is meant by the term 'Client Server Architecture' and what are advantages of this approach?
2. Describe that what conditions might a Distributed database System not function as well as a centralized Database System.
3. What do you understand by Distributed Data Base system? Describe the types of Distributed Data Base System.
4. Describe the advantages and disadvantages of distributed DBMS.
5. Describe the Data Fragmentation. Explain functions of distributed DBMS.
6. What is Replication and Allocation in distributed Data Base Design?
7. Consider the following tables:
   Employee (Emp_no, Name, Emp_city)
   Company (Emp_no, Company_name, Salary)

   (a) Write a SQL query to display Employee name and company name.

(b) Write a SQL query to display employee name, employee city, company name and salary of all the employees whose salary >20000

(c)Write a query to display all the employees working in ‘XYZ’ company.

8. What is SQL? Explain the view in SQL? How is it defined?
9. Consider the relational table given below and answer the following SQL queries.

   Employee (SSN-No, Name, Department, Salary)

   (a) List all the employees whose name starts with the letter 'L'.

   (b) Find the maximum salary given to employees in each department.

   (c) Find the number of employees working in 'accounts' department.

   (d) Find the second maximum salary from the table.

   (e) Find the employee who is getting the minimum salary.

10. Describe the Indexing process in Structured Query Language.

E-Commerce (BCA-304)

UNIT – I

1. What is E-Commerce? And explain trade cycle of E-Commerce.
2. What are five potential benefits of electronic commerce for businesses?
3. Explain E-Commerce Three Models with suitable examp[le.
4. Give examples of how the supplier's information system can be used at every link in the value chain by the customer?
5. How can electronic commerce enhance customer service? Give an example.
6. Internetworking is changing business into e-business. What are the main effects being seen in business?
7. Briefly discuss the concept of Internet Marketing? How is it different from Traditional Marketing?
8. "Internet has emerged as a competitive advertising media? Discuss, Also discuss the various models of Internet Advertising.
9. Briefly discuss the organizational applications of E-commerce.
10. "Internet has emerged as a competitive advertising media? Discuss, Also discuss the various models of Internet Advertising.

UNIT – II

1. What is E-banking? Discuss the banking activities where E-0banking has been accepted by the public in a big way.
2. "With the adoption of E-Commerce by business houses, organization structures are also likely to change" discuss the above statement with help of suitable examples.
3. A) Explain about the E-Commerce framework in details.
4. Explain electronic data interchange (EDI) used in E-Commerce.
5. What is electronic Application integration(EAI).how it is useful to E-Commerce and E-Business.
6. What types of electronic payment systems are required in E-Commerce? Why are there different types of payment systems? Explain the necessary characteristics of each type of payment system and give an example each of where it is used.

7. What are the main differences between electronic cheque payment and credit Card payment in E-Commerce? Explain cheque transaction protocol used in E- Commerce.
8. What are two major EDI standards used in E-Commerce? Which is the standard accepted for Government transactions in India?
9. Explain B2B E-Commerce using an example of a book distributor who stocks a large number of books, which he distributes via a large network of book sellers. Assume that the distributor has stocks of books of a large number of publishers and book sellers order books as and when their stock is low. Distributors give 1 month's time to booksellers for payment.
10. Explain in detail how internet provides an environment for commercial transactions.

UNIT – III

1. What are the types of electronic payments systems required in E-Commerce? Explain the necessary characteristics of each type of payment system with an example.
2. a) Explain the features for secure online transaction models in details.
   b) Explain how a digital currency system works.
3. i) Discuss about E-cash client software and its implementation.

   ii) Discuss about smart cards.

4. i) What are offline and online 6transactions? Give example.
   ii) Explain the protocols used in electronic payments.
5. What are the technical problems encountered during credit card transactions ? how to overcome the problems?
6. What is meant by E-Auction? How will you conduct E-Auction? What is the technology behind it? Discuss briefly.
7. i) What is virtual internet payment system? Why it is required?
   Ii) What is virtual transaction process? Give examples.
8. I) Write an elaborate notes on secured web servers.
   Ii) Write a detail note on digital signature.
9. Describe the suitable example of prepaid and postpaid payment system.
10. What is e--payment? Discuss the functions of E-payment system? Why is orientation and standardization required for e -payment business?

UNIT – IV

1. Why is security important in E-Commerce? Discuss the security issues to be taken into account while designing a security system for e-commerce.
2. i) What do you understand by symmetric key cryptography? What are the main advantage and disadvantage of symmetric key cryptography?
   ii) What is public key encryption? In what way is it different from private key encryption? Why is it important in ecommerce?
3. Discuss in detail about the security issues for which electronic cash is transferred over internet with an example.
4. a) Explain how SSL helps an EC system to be secure
   b) Explain how SET protocol helps transactions in E
5. Discuss the security requirements of Internet and EC application and how these requirements are fulfilled by various hardware and software systems
6. Explain the Computer/Network Security and Client Computer Security.
7. What is a certifying authority? Why is a certifying authority required in E-Commerce? How a certifying authority does perform its tasks?
8. What is DES? Explain what DES does when the following hexadecimal plain text is input to DES hardware.
   A1907FBCD986543201FED14E890ABCA5
9. Describe the Risk Management System with example.
10. What are the main differences between DES based encryption and RSA based Encryption? Is it possible to combine these two systems? If so explain how?

UNIT – V

1. Write down the Brief Introduction to- Global IT Management.
2. Short notes on:
   a) The Global Company,
   b) Global Business
   c) IT strategies
3. What are the Global IT Platforms and what type of necessary Global Data Issues are required?

4. For each of the points stated below, explain how they could be a facilitator or an inhibitor of business. Also, give corresponding examples for each point.

    - Top management
    - Technological innovations emerging in the markets
    - Internal grievance handling system
    - Corporate culture

5. What are the Cultural, Political and Geo-economics Challenges?
6. Outline the steps in international marketing research.
7. What are a global company and multinational company? Give the suitable example of both companies.
8. Explain the barriers of Global IT Management and also define the global system developments.
9. What are the key technologies for B2B E-commerce? Explain architectural models of B2B E-commerce and also Describe the functional requirements for online selling and what specialized services and servers perform these functions
10. Write notes on following:
    a) Content Marketing
    b) Collaborative Computing
    c) Digital Certificate
    d) E-Logistic

Management Information System (BCA306)

UNIT-1

Q.1 Define MIS? Explain structure of MIS.

Q.2 Write short note on:

a) Benefits of MIS
b) Limitations of MIS
c) Requirements of MIS

Q.3 Describe the role of MIS in Organization.

Q.4 What is General support system? Explain its role in organization.

Q.5 State any two advantages of MIS in Marketing Management.

Q.6 List application of MIS in Services Sector.

Q.7 List three areas of application of MIS.

Q.8 List common threats & measures required for overcoming threats? State four benefits of good MIS?

Q.9 Explain Business-to-Business organization.

Q.10 What is role of MIS in Hotel management?

UNIT-2

Q.1 What is System development life cycle. Explain its all phases.

Q.2 Write short notes on:

a) DFD
b) Decision Tree
c) Decision Tables

Q.3 What is Data dictionary? Explain with its Pros and Cons.

Q.4 What is system designing models? Explain any two models.

Q.5 Describe different System analysis Tools.

Q.6 Explain importance of SDLC process in Organizations.

Q.7 Give importance of MIS in Banking, i.e. its different functions under Account opening utility.

Q.8 Differentiate between Structured English and Data dictionary.

Q.9 Explain difference between Decision table and Decision tree.

Q.10 Why system study required in any organization?

UNIT-3

Q.1 What do you understand by Information?

Q.2 Explain Information Quality. And discuss types of information in brief.

Q.3 What is Data base management system? How it is differ from file system.

Q.4 Explain managerial overview of Computer hardware & software.

Q.5 Write short note on:

a) Kinds of system

b) Dimension of Information

Q.6 What are the applications of information system.

Q.7 What do you understand by Telecommunication?

Q.8 Explain different types of DBMS.

Q.9 Write short note on:

a) Computer hardware

b) Computer Software

Q.10 What is the role of Information system in MIS?

UNIT-4

Q.1 Discuss Business application of Information technology.

Q.2 Differentiate between internet, intranet and extranet.

Q.3 What is the role of Information system for Business applications.

Q.4 State components of decision support system and give significance of each?

Q.5 How many types of decision in organization? Explain in brief.

Q.6 What is E- commerce? Write its applications.

Q.7 What is the role of internet in E- commerce?

Q.8 Explain benefits of E- commerce?

Q.9 Identify use of Decision Making System.

Q.10 What is business Strategy? Explain in short the types of strategies.

UNIT-5

Q.1 Which are phases of Customer Relationship Management with blocks?

Q.2 Explain main challenges forced by CRM.

Q.3 Enlist benefits of Enterprise Resource Planning in an organization?

Q.4 Explain Business-to-Business organization.

Q.5 Write short note on:

a) Procurement management system

b) Customer Relationship management

Q.6 Explain IS security and Ethical responsibility.

Q.7 Describe Supply chain management with example.

Q.8 Explain how business planning is different than conventional IT planning?

Q.9 Explain concept of Data warehousing?

Q.10 What is corporate planning in MIS?

Computer Organization & Architecture-(BCA 401)

UNIT-1

Q.1 What is register transfer language? Explain the data movement among registers.

Q.2 What is control function? Explain with block diagram & timing diagram.

Q.3 Explain common bus system for 4-bit four register.

Q.4 What are three state bus buffers? Explain with diagram.

Q.5 What are microoperations? Classify different category.

Q.6 Show the block diagram of the hardware that implements the following register transfer statement:

T2: R2 ← R1, R1 ← R2

Q.7 Explain 4-bit binary adder- subtractor with diagram.

Q.8 Explain 4-bit binary incrementer.

Q.9 Explain 4-bit binary arithmetic circuit.

Q.10 Explain the hardware implementation of logic microoperation.

UNIT-2

Q.1 What is central processing unit? Explain with its major components.

Q.2 Explain CPU general register organization.

Q.3 Explain Stack organization of memory & its function.

Q.4 What do you understand by instruction format? Explain different types of instruction format.

Q.5 What is addressing mode? Explain different types of addressing mode.

Q.6 An instruction is stored at location 300 with its address field at location 301. The address field has the value 400. A processor register R1 contains the number 200. Evaluate the effective address if the addressing mode of the instruction is (a) direct (b) immediate (c) relative (d) register indirect (e) index with R1 as the index register.

Q.7 Explain the subroutine call & return.

Q.8 What is program interrupt? Explain the different types of interrupt.

Q.9 What is instruction pipeline? Explain four segment instruction pipeline.

Q.10 What is parallel processing? Explain different types of parallel processing.

UNIT-3

Q.1 Explain hardware implementation of addition & subtraction with signed magnitude data.

Q.2 Explain Hardware algorithm with flow chart for add & subtract operation signed magnitude data.

Q.3 Explain algorithms for addition & subtraction with in signed-2's complement representation.

Q.4 Explain the flow chart of multiplication algorithm for signed magnitude data.

Q.5 Implement the multiplication of 23(10111) and 19(10011) using multiply algorithm.

Q.6 Explain the hardware implementation of Booth multiplication algorithm.

Q.7 Explain the Booth algorithm using flow chart.

Q.8 Implement the multiplication of (-9) * (-13) using Booth algorithm.

Q.9 What is array multiplier?

Q.10 Explain the hardware implementation of 4-bit by 3-bit array multiplier.

UNIT-4

Q.1 What is control memory? Explain the microinstruction microprogram.

Q.2 Explain the micro programmed control organization with diagram.

Q.3 What is control address register?

Q.4 Explain the next address sequencer.

Q.5 Explain the microinstruction format.

Q.6 Explain the Horizontal microinstruction format.

Q.7 Explain the vertical microinstruction format

Q.8 Using the mapping procedure described the first microinstruction format for the following operation code (a) 0010 (b) 1011 (c) 1111

Q.9 Formulate a mapping procedure that provides eight consecutive microinstruction for each routine. The operation code has six bits and the control memory has 2048 words.

Q.10 Explain the difference between hardwired control and micro programmed control.

UNIT-5

Q.1 Explain the Memory hierarchy in a computer system.

Q.2 What is ROM ? Explain the Bootstrap loader.

Q.3 What is RAM? Explain the working with block diagram.

Q.4 (a) How many 128 x 8 RAM chips are required to provide a memory capacity of 2048 bytes?

(b) How many lines of the address bus must be used to access 2048 bytes of memory?

Q.5 What is Associative Memory/ explain its hardware organization.

Q.6 What is Cache memory? Explain the locality of reference.

Q.7 find out the hit ratio of cache memory if total hits of cache is 50 and misses is 35.

Q.8 A computer uses RAM chips of 1024 x 1 Capacity.

(a) How many chips are needed, and how should their address lines be connected to provide a memory capacity of 1024 bytes.

(b) How many chips are needed to provide a memory capacity of 16K bytes?

Q.9 What is virtual memory? Explain the mapping of virtual address in memory table.

Q.10 What is DMA? Explain the working of DMA controller.

Advanced Internet Programming (BCA 403)

Unit-I

Q.1 (a) Explain the Active server page.

(b) what is the mean of scripting language? What is difference between server side scripting and client side scripting?

Q.2 (a)Explain the methods to declare and use variables in ASP using VB scripts as the scripting language.

(b)How ASP differs from Client-Side Scripting Technologies. Discuss with comparison.

Q.3 (a) What are special subtypes in VB script?

(b) What is http header?

(c) Mention four applications of internet.

(d) Illustrate the concept of typecasting variables.

Q.4 Write the steps for Dissecting the first ASP Script. Which are the fatal & nonfatal bugs arises while debugging ASP Scripts.

Q.5 (a) Underline the errors in the following code and write the corrected script.

```
<%
dim fname fname=Request.Query("fname") If fname<>"" Then Response.Output("Hello
" fname "!<br />") Response.Output("How are you today?") End %>
```

(b) Differentiate between Properties and Methods with the help of an example.

(c) Differentiate between IF…THEN..ELSE and SELECT…CASE statements with the help of an example. Give the output for the following script code:

```
<Script Language="VBScript">
B=10
For A=1 to 12 step 3
C=A+B
Document.Write(C)
B=B-1
Document.Write("<BR>")
Next
</Script>
```

Q.6 What is JavaScript and where we can use JavaScript? How we can add JavaScript to HTML page. Explain . How variables are declared in JavaScript. Explain.

Q.7 What is the need of client-side scripting? What is the difference between Java and JavaScript? What are the methods available in Date object?

Q.8 How you define a function in VB script? Define a function in VB script to add two numbers,

Q.9 What is the dynamic web designing? How it is achieved in ASP. What are the differences between dynamic web page and static web page.

Q.10 Explain ASP applications. How an asp application run on your PC.What is IIS.

Unit-II

Q.1 What does it mean to declare a variable. What are Environmental variables. How we can Access them. Write pitfalls of session variables.

Q.2 (a)How do we assign the memo data type in ASP page as variable?

(b) How to include active X controls in ASP code?

(c) When does the application ON End event handler fire?

(d) < % Response. Redirect ("http:IIwww.sql.com")% > What does this code accomplish?

Q.3 (a) Explain with examples the difference between implicit and explicit declaration of variables.

(b) Explain Script and its limitations.

Q.4 What is control structures. Explain the types of control statement using example.

Q.5 (a) Explain string handling function in detail.

(b) Write a command to remove the leading and trailing spaces from a character variable NAME, where NAME = "##Smriti# Malhotra###" (where # denotes a blank space).

(c) What is the purpose of the HOUR( ) function? Explain with the help of an example.

(d) Give the output for the following :

(i) Response.Write(LTRIM(LEFT("####Congratulations", 7)) (where # denotes a blank space)

(ii) Response.Write((3 *5 > 4 + 5) AND (2 ^ 3 + 9 \ 2))

(iii) Response.Write(ABS(3 – 11 * 4 ^ 2))

Q.6Write each steps cleary to write,complile and execute an ASP program.

Q.7 Write the Programming features of ASP.explaint any two type of loop in ASP

Q.8 Explain the ASP operators with examples.

Q.9Write Short Notes on the Following:

(a) Asp subroutine and Function

(b)Static and Dynamic Array

(c)Asp procedures

(d)Select Statement

Q.10 (a) What is the asp procedure, explain with an example.

(b)Write the methods available in String object.

Unit-III

Q.1 What is cookies? How You will store and retrieve cookie? Demonstrate it with the heip of an ASP program.

Q.2 What is object? Explain the building blocks of objects. Differentiate between Session Object & Application Object.

Q.3 (a)What is the Response Object? How we dissecting the Response object. Explain.

(b)How do display images use Response object in ASP?

Q.4 What is difference between server side validation and client side validation?

Q.5 What are event handlers of session object in ASP?

Q.6 Explain Cookies. How to read cookies using the request object.

Q.7 How an application object is locked an unlocked, Given an example uses the Lock method to prevent more than one user from accessing the variable visits at a time, and the Unlock method to unlock the locked object so that the next client can increment the variable visits.

Q.8What is the application and session variable? How to store and retrieve application variable in asp?

Q.9 Write short notes on the following:

(a) Application_OnStart and Session_OnStart events

(b) Application_OnEnd and Session_OnEnd events

(c)Cookies

(d)Removing session variables

Q. 10 give the steps and required code to demonstrate how to use the Session object in an ASP page.

Unit-IV

Q.1 Differentiate between Asp and PHP.

Q.2 Explain about the ASP Object. What are the formatting objects?

Q.3 Write short notes on the following:

(a)Gloabal.asa File

(b)asp special characters

(c)ASP VS ASP.Ner

(d)HTML

(e)ASP Adorotator

Q.4What is the asp components? Name and specify the usage of any two ASP components.

Q.5 how email is sent in asp? Write asp code to sent a text email with cc and bcc field.

Q.6what is the FileSystemObject component? write the steps involved in ASP to read and write files.

Q.7 How we can display an image form an asp file.Give an example.

Q.8 What is the File Object? Explain the properties and methods of File Object.

Q.9 (a)give the basic code to open a text file located in C:/Dir/A.txt

(b)Give the syntax of CreatTextFile method. Demonstrate with proper example.

Q.10 Write Short Notes on the Following:

(a)Asp Server (b)Asp Error (c)Asp Browser cap (d)Asp dictionary (e)Asp Folder

Unit-V

Q.1 How data can be inserted, updated & deleted in database records.

Q.2How we can work with database using ASP. How SQL can be executing using ASP & ADO.

Q.3 What is the ASP form. How the user input is taken. Explain the get and post method.

Q.4What is the use of Data binding? What is ActiveX control?

Q.5 Write the short notes on the following:

(a) Request.QueryString

(b) Request.Form

(c)Recordset

(d) ADOConnection

(d)ADO command

Q.6 What is the ADO? Explain the active-x data objects

Q.7 Write and design a web application for login page using ado.the login detail stored in MS Acces database.

Q.8 Write a program using ADO to display records of Employee table where company name starts with ‘A’.

Q.9 What is the record -set? How SQL command are used to update and delete records, explain with examples.

Q.10 what is the connected and disconnected environment? What are the differences between ADO and ADO .net.

Front End Design Tools (BCA 404)

UNIT – 1

1. What is Visual Basic? Describe any four features of Visual Basic.
2. Explain briefly the usage of any five controls in the Toolbox?
3. Create a VB program to input two numbers add display their sum?
4. Explain the concept of dynamic arrays?
5. What is a function? How is it declared and called?
6. What is the difference between function and a procedure?
7. Write a VB program to find the largest of three numbers along with the form design.
8. Write all the looping structures of VB and give their description and usage as well.
9. What is If-Then-End If structure? Write its general form with an example.
10. Give an example to illustrate the usage of VarType () functions.
11. Explain user-defined data type with syntax.

UNIT – 2

1. Explain the common dialog control in visual basic
2. How is a control array created at design time and run time?
3. Compare list box and combo box
4. What is the difference between an error and an exception? Explain the error handling mechanism in VB
5. What is menu? Explain the steps of creating a menu with a suitable example.
6. Explain the usage of list box and combo box with suitable examples.
7. What is an MDI form and what are its properties? explain with an example.
8. Outline a visual basic program for displaying the grade of the student in a text box based on then marks of a student as follows:
Marks >90 80-90 70-79 60-69 50-59 <50
Grade S A B C D E
9. Write a visual basic program to simulate a calculator.
10. Create an application program to accept employee information and display it using message box. Give the design, properties and code.
11. Define a form object. What do you mean by OLE control?

12. Explain loading and unloading of the forms.

UNIT – 3

1. What are the differences between a Combo box and the Data Combo control? Explain with an example.
2. Differentiate between a List Box and a Data List control. Illustrate with an example.
3. Explain any three controls used in VB to manipulate data retrieved from tables.

4. Discuss the open method for an ADO connection.
5. Explain the open method for a Record Set.
6. Explain the execute method.
7. Develop a VB program to display records from database using ADODC control.
8. Write the steps to add, delete, and search data using an ADO Control.
9. Design and code an application to accept the employee information and display it using Message Box.
10. Write a VB program to accept data through a form and store the following in a database: student No., name and marks. Also display student scoring marks more than fifty.

UNIT – 4

1. Write Steps for creating a Help using Microsoft Help workshop.
2. a)What are MAPI controls? Explain their usage by giving an example.
   b) How can we create a Hotspot in a Help file?
3. Write the steps to create a Help file using HTML workshop.
4. Explain the following-
   {i} Content. Sensitive Help
   {ii} Microsoft Transaction Server I
   {iii)API function
5. What is COM/DCOM? Explain in detail.
6. Differentiate between the following using examples:
   (a)MDI and SDI application
   (b)Subroutines and Functions
   (c)DAO vs. RDO.
7. Write short notes on any four of the following :-
   (a)Form Lifetime
   (b)API
   (c)Multithreading in VB

   (d)Class module

   (e)DCOM

8. What is help file? How can we create a help file for any VB application? Write down complete steps.
9. (a) User has created a "COMPANY" database in MS-Access. Now he wants to access it through VB. Write down complete steps to open his DB through VB.
   (b) In how many ways user can retrieve data from a table and get is display on the form. Which important properties are to be set for accessing a table?
   (c) What is COM/DCOM? How an external worksheet designed in MS-Excel may be accessed in VB environments?
10. Define debugging? Which types of error are detected using debugging? What is the usage of immediate window?

Data Warehousing and Data Mining (BCA 405)

UNIT- I

Q. 1 How is a data warehouse different from database? How are the similar?

Q. 2 Why data transformation is essential in the process of knowledge discovery?

Q. 3 Describe the steps involve in the design and construction of data warehouse.

Q. 4 Enumerate the building blocks of data warehouse. Explain the importance of metadata in a data warehouse environment.

Q. 5 Diagrammatically illustrate and discuss the data warehousing architecture with briefly explain components of data warehouse

Q. 6 (a) Discuss the components of data warehouse.
(b) List out the differences between OLTP and OLAP.

Q. 7 Discuss the various schematic representations in multidimensional model.

Q. 8 (a) Explain the OLAP operations I multidimensional model.
(b) Explain the design and construction of a data warehouse.

Q. 9 Explain the three-tier data warehouse architecture.

Q. 10 (a) Write notes on metadata repository.
(b)Discuss the business requirement of data warehouse.

Q. 11 Explain the features of data warehouses and data marts.

UNIT-II

Q. 1 With the neat scratch discuss the STAR schema modeling for a student academic fact database.

Q. 2 Explain the evolution of Database technology?

Q. 3 Discuss the advantages of the STAR Schema Dimensional Modeling.

Q. 4 Explain the steps of knowledge discovery in databases?

Q. 5 Why ER is not suitable for Data Warehouses? Comparison between ER and Dimensional Modeling

Q. 6 Explain the steps in designing a Dimensional Model.

Q. 7 Write short note on
(a) Snowflake Schemas
(b) Starflake Schemas

Q. 8 Discuss the three important application areas of Multi-Dimensional Data Models.

Q. 9 (a) Explain the types of OLAP Servers.
(b)Explain regression in predictive modeling?

Q. 10 Discuss the following in brief
(a) Aggregate fact tables
(b) ROLAP
(c) MOLAP

UNIT-III

Q. 1 Discuss the typical OLAP operations with an example.

Q. 2 List and discuss the basic features that are provided by reporting.

Q. 3
(i) Explain the various primitives for specifying Data mining Task.
(ii) Describe the various descriptive statistical measures for data mining.

Q. 4 Explain the steps involve in Data Mining.

Q. 5 Write a short note on web mining taxonomy.

Q. 6 Explain the different activities of text mining.

Q. 7 Discuss and elaborate the current trends in data mining.

Q. 8 Write short note on

(a) Knowledge discovery process (KDD)

(b) OLAP versus data mining

© Data mining functionalities

Q. 9 Explain in brief the data processing steps.

Q. 10 (a) Write short notes on patterns?

(b) Explain mining single –dimensional Boolean associated rules from transactional databases?

Q. 11 Explain in brief the following.

(a) Classification Systems
(b) Data Mining Task
(c) Data Reduction

UNIT- IV

Q. 1 (a) What is cluster analysis?

(b) What are the requirements of clustering?

© What are the two data structures in cluster analysis?

Q. 2 List out the five categories of decision support tools.

Q. 3 Discuss the requirements of clustering in data mining.

Q. 4 Explain the partitioning method of clustering.

Q. 5 Explain data mining applications for Biomedical and DNA data analysis.

Q. 6 Explain data mining applications fro financial data analysis.

Q. 7 Explain the types of data mining.

Q. 8 Explain classification by Decision tree induction?

Q. 9 Decision tree induction is a popular classification method. Taking one typical decision tree induction algorithm, briefly outline the method of decision tree classification.

Q. 10 Consider the following training dataset and the original decision tree induction algorithm (ID3). Risk is the class label attribute. The Height values have been already discredited into disjoint ranges. Calculate the information gain if Gender is chosen as the test attribute. Calculate the information gain if Height is chosen as the test attribute. Draw the final decision tree (without any pruning) for the training dataset. Generate all the "IF-THEN rules from the decision tree.

Q. 11 Explain data mining applications for following areas.

(a) Telecommunication industry.
(b) Health care analysis.
(c) Banking industry.

Q. 12 With relevant example discuss constraint based cluster analysis.

Q. 13 Write short note on
- (a) Memory-based reasoning
- (b) Neural networks
- © Genetic algorithms

Computer Networks (BCA 501)

Unit-1

Q1. What is Computer Networks? Explain the characteristics of computer networks.

Q2. What is Network protocol? Explain the services of network protocol.

Q3. What is Edge Access network? Explain it with graph theory related concept.

Q4. Waht is physical Media. Explain the types of physical media.

Q5. Give the comparison of Guided media & unguided media.

Q6. What is OSI Layers? Explain the services of OSI Layers

Q7. Compare the OSI Model with TCP/IP model.

Q8. What is ISP? Explain the types of ISP as you know.

Q9. What is NAP? How they are correlated with ISP explain it.

Q10. What are Internet back bones? Explain the uses of Internet backbones in real life.

Q11. What is Network topology? Explain the types of topology in details.

Q12. What are the components of Data communication? Explain the various mode of Communication in details.

Q13. What is Modulation technique? Explain the various modulation techniques in details.

Q14. What is Shannon's Capacity? Explain the Uses of Shannon's in real life.

Q15. A channel has a bandwidth of 5kHz and a signal to noise power ratio of 63. Evaluate the bandwidth

Required if the S/N power ratio is reduced to 31. What will be the signal power required if the

Channel bandwidth is reduced to 3 KHz

Unit-2

Q16. What is application layer protocol? Explain the services of application layer protocol.

Q17. What is WWW? Explain the services & feature of www.

Q18. What is HTTP? Explain the method of HTTP as you know.

Q19. Explain the Header format of HTTP as you know.

Q20. What is web cache? Explain the role of web cache in user interaction.

Q21. What is FTP? Explain the role and responsibility of FTP?

Q22. What is ftp commands? Explain the list of ftp commands as you know.

Q23. What is E-mail System? Explain the format of e-mail.

Q 24. Describe about the following

- SMTP.
- POP
- MIME

Q25. What is DNS? Explain the format of DNS record & messages**.**

Q26. What is Multiplexing & Demultiplexing Technique? Explain the types of multiplexing Technique Used in computer Network.

Q27. What is switching technique in computer network? Give the difference between packet Switching & Circuit switching technique.

Q28. What is Error detection & Error correction Technique in computer network? Explain it in Details.

Q29. Write Short Notes on the following---------

- **CRC & LRC**
- **Check Sum**
- **Parity Code**
-

Q30. The code word is received as 1100100101011. Check wheather there are errors in the Received codeword, if the divisor is 10101. (The divisor corresponds to the generator Polynomials)

Unit-3

Q31. What is Transport layer? Explain the protocol and services of transport layer.

Q32. What is Multiplexing & Demultiplexing application in transport layer explain with Suitable diagram.

Q33. What is Connection less & Connection oriented protocol.

Q34. What are three way handshaking protocols? Explain it.

Q35. What is UDP segment structure & UDP Check sum explain it.

Q36. What are the principal of reliable data transfer? Explain it

Q37. Describe the following…….

- Go back N ARQ protocol.
- Selective Repeat protocol

Q38. What is UDP header format? Explain the UDP header format.

Q39. What is TCP header format? Explain the TCP header format.

Q40. What is Telnet? Explain the responsibility of telnet.

Unit-4

Q41. What is network Layer? Explain the protocol & Services of Network layer.

Q42. What are the routing principals? Explain the types of routing algorithm.

Q43. Explain the Distance vector routing algorithm with suitable example.

Q44. Explain the Link state routing algorithm with suitable example.

Q45. What are the routing components? Explain it.

Q46. Give the comparison between IPV4 & IPV6 Packet header formats.

Q47. What is PPP? Explain the transition states of PPP.

Q48. What are layer of PPP? Explain the services of PPP at the data link layer.

Q49. Describe about the following…

- NCP
- PAP
- CHAP

Q50. What is LCP? Explain the packet header format of LCP.

Q51. What are the types of IP address explain the types of IP Address.

Q52. Calculate the Broad cast ID, Net_ID, & Valid IP Range of the following.

- 172.16.5.1
- 191.168.5.1
- 222.167.61.5

Object Oriented Programming using C++(BCA502)

UNIT-I

1. Define Object-oriented programming and Explain feature of Object oriented programming. How it is different than procedure oriented programming.
2. Explain following :
    a. Exception handling
    b. Abstract class.
    c. seekg and tellg functions
    d. setw() and setfill.
    e. ios::ate and ios::out
    f. Container class
    g. Extractor and manipulators.
    h. This pointer
    i. Default arguments
    j. Static data members and member functions
    k. Data abstraction and encapsulation.
    l. Message Passing.
    m. Dynamic Binding.
    n. Data hiding
    o. Polymorphism
3. Difference between object oriented programming and procedure oriented programming.
4. Explain friend function with example and list sum of the special properties of friend function.
5. What is a friend function? What are the merits and demerits of using the friend function?
6. What is Constructor? Explain types of Constructor with example.
7. Explain following with respect to C++ wit examples.
   1)new operator 2) destructor
8. What is copy constructor? When it is used implicitly for what purpose?
9. What is typecasting? What are explicit and implicit type conversions?
10. What do you mean by type conversion? Give an example of basic to object conversion.

Unit II

1. Describe data types in C++ in Details. Explain public, private and protected access specifiers and show their visibility when they are inherited as public, private and protected.
2. What is a virtual function? Write rules for virtual function. Explain wit example.
3. Explain Friend function with example.
4. Describe inline function in C++ with example.
5. Explain function prototyping with example.
6. Explain function overloading with example.
7. What is recursion? While writing any recursive function what thing(s) must be taken care of ?
8. What is inline function? When will you make a function inline and why ?
9. What is a class? How objects of a class are created ?
10. What is the significance of scope resolution operator (::) ?
11. Define data members, member function, private and public members with example.
12. Define a string data type with the following functionality:

    - A constructor having no parameters,
    - Constructors which initialize strings as follows:
        - A constructor that creates a string of specific size
        - Constructor that initializes using a pointer string
        - A copy constructor
    - Define the destructor for the class
    - It has overloaded operators. (This part of question will be taken up in the later units).
    - There is operation for finding length of the string.

Unit III

1. Explain use of pointer in C++.
2. What are the differences between pointers to constants and constant pointers?

3. Difference between class and struct and also illustrate with an example.
4. What are the difference between pointers to constants and constant to pointers?
5. Explain about call by reference and return by reference with program.
6. What do you understand by function returning a pointer? Give any suitable example to support your answer.
7. Explain the following with examples.
    a. Pointers and functions.
    b. Pointers to objects.
    c. Pointer to pointer.
8. Explain the role of seekg(),seekp(),tellg(),tellp(),function in the process of random access in a binary file.
9. Explain the Standard Template Library and how it is working?
10. Explain Reference operator (&) and Dereference operator (*) in C++ with suitable example

Unit IV

1. Define operator overloading? Explain how to overload unary operator and binary operator.
2. Give a programming example that overloads = = operator with its use.
3. Which operators cannot be overloaded? Write steps to overload + operator so that it can add two complex numbers. Explain with example how can a function template be created.
4. What does inheritance means in c++? What are different forms of inheritance? Give an example of each.
5. Show the use of multiple inheritance with the help of proper programming example
6. Explain Inheritance in C++ with example.
7. Write a C++ program demonstrating use of the pure virtual function with the use of base and derived classes.
8. Differentiate between compile time polymorphism and run time polymorphism.
9. Write a program in c++ which demonstrate the use of inheritance inheritance.

10. What is inheritance? Differentiate public inheritance from private inheritance. Write a C++ program to define a base class Father with attributes name, age. Inherit another class Son from the base class with specialized attributes name and age. Write member functions to read and print the details of members in both classes. Using a pointer to the class Father, invoke the function that prints the Father class's attributes and also print Son class's attributes.
11. Explain in detail about multiple inheritances with a detailed example program.

Unit V

1. List and explain in brief various functions required for random access file operations.
2. Illustrate with an example, how endl and setw manipulator works.
3. What is the difference between opening a file with constructor function and opening a file with open ( ) function
4. What is the basic difference between manipulators and ios member functions in implementation?Give examples.
5. What are input and output streams?
6. What are the various classes available for file operations.
7. What is a file mode ?describe the various file mode options available.
8. Describes the various approaches by which we can detect the end of file condition.
9. What do you mean by command line arguments?
10. Write a function template for finding the minimum value contained in an array.
11. What do you mean by exception handling?
12. Describe the role of keywords try,throw and catch in exception handling?
13. When should a program throw an exception?
14. What is an exception specification?When is it used?
15. When do we used multiple catch handlers?
16. Explain mechanism of exception handling.

Software Engineering (BCA 503)

UNIT – 1

11. Explain the software engineering, what do you understand by the term "software"? Discuss its characteristics and components?
12. Discuss the software process and product metrics with the help of examples and explain the SDLC.
13. What are the major phases in the water fall model and spiral model? Where is spiral model beneficial?
14. What is a prototype model? Under what circumstances is it beneficial to construct a prototype model?
15. Describe the Spiral Model of software development with strength, weakness. also give the reason for using Spiral Model.
16. What is System Development Life Cycle(SDLC). Explain its Phases.
17. What are the fundamental activities of a software process?
18. Which is more important-the product or process? Justify your answer.
19. What do you understand by Software measurements. Why it is necessary for Software.
20. Estimate the effort parameters from the set of data as shown in table.

Project	**Size(KLOC)**	**Effort(PM)**
1.	30	84
2.	20	56
3.	50	140
4.	10	28

UNIT – 2

11. Describe the COCOMO Model of Software engineering.
12. How we Estimate cost of a software by Constructive Cost model (COCOMO). Explain all three modes of COCOMO Model with example.
13. Suppose that a system is developed and line of source instruction are 100KLOC. Compute the nominal effort and development time for each of the three development modes i.e. Organic, Semidetached and Embedded.
    Note:- Nominal effort means all the 15 Cost driver attribute have nominal values = 1. And Effort & Time Constant are given :-

Modes	A	b	C	d
Organic	3.2	1.05	2.5	0.38
Semidetached	3.0	1.12	2.5	0.35

Embedded	2.8	1.20	2.5	0.32

14. Explain the Putnam resource allocation model and what are the limitations of this model?
15. What do you mean by Risk Analysis? Explain different steps of Risk Analysis.
16. Why requirement analysis is important in development of a software ?describe analysis principles in details.
17. Define Requirement Analysis. Write Requirement Analysis principles. Also Explain FAST & DFD Techniques of Requirement Analysis.
18. Define SRS. Also List desirable characteristics of a good SRS document.
19. Draw the Data flow diagram for library/banking management system. Clearly describe the working of the system.
20. Write short note on Data dictionary.

UNIT – 3

11. Explain the fundamental software design concepts in detail.
12. Draw a translating diagram for analysis model into a software design. Brief about each translations.

13. Define Cohesion and Coupling in the context of design. Also explain different type of Cohesion and Coupling used in modular design.
14. What is the difference between Function-Oriented Design and Object-Oriented Design ?
15. Explain about the various design concepts considered during design?
16. Write short notes on user interface design process?
17. Explain data architectural and procedural design for a software.
18. What is Reliability. What is Importance of Hardware Reliability & Software Reliability.
19. Explain Logarithmic Poisson Model of Reliability.
20. Justify “Design is not coding and coding is not design”.

UNIT – 4

11. What do you mean by Software Testing ? Why its required ? Also explain different type of testing techniques.
12. Explain Unit Testing & Integration Testing with suitable diagram.
13. Explain the testing objectives and its principles.
14. What are the attributes of the good test? Explain the test case design.
15. Explain the basis path testing in detail.
16. Discuss the differences between black box and white box testing .
17. Explain the different integration testing approaches.
18. What are all formulas for cyclomatic complexity? Calculate cyclomatic complexity for greatest of all these numbers.

19. What is the difference between testing and debugging. Also explain debugging techniques.
20. Write a note of

    (i) Black box testing.

    (ii) Regression testing.

    (iii) White box testing

    (iv) Integration testing.

UNIT – 5

1. What are the maintenance activities to be focused while evolving the system explain.
2. Write short notes on Software maintenance
3. Discuss the various problems related to maintenance.
4. Explain in details about maintenance techniques and tools.
5. Justify the statement "Software maintenance is costlier".
6. What is Software Quality Assurance? What are the measures of software quality?
7. Discuss the concept of software maintenance process.
8. Discuss various key process areas of CMM at various maturity levels and what the shortcomings of ISO 9001 certifications are?
9. Write short on Reverse Engineering.
10. Comparison between ISO & SEI CMM and explain the Software crises.

Artificial intelligence (BCA504)

UNIT – 1

1. What do you understand by artificial intelligence?
2. Explain the characteristics of Production Systems?
3. Describe AI Techniques and criteria for success.
4. Describe the water-jug problem using production rules.
5. What is AI and explain applications of AI.
6. Define the Problem as a State Space Search.
7. Explain the Production Systems?
8. Explain the control strategies in search techniques?
9. What is Turing test? Explain it.

UNIT – 2

10. Explain Generate and Test Techniques.
11. What are the differences between BFS and DFS?
12. Define the hill climbing limitations like Plateau, Local Maxima and Ridge.
13. What is the Simple hill climbing?
14. What is the Steepest Ascent Hill climbing?
15. Explain the best first search based A* algorithm with example.
16. Explain the hill-climb method with different limitations using suitable Examples.
17. Explain the BFS with advantages and disadvantages.
18. Explain the best first search based AO* algorithm with example.
19. Explain the DFS with advantages and disadvantages.
20. Explain the BFS with advantage and disvantages.

UNIT – 3

21. Represent the following facts in predicate logic:
    a) Spot is a dog.
    b) Spot has a tail.
    c) All dogs have tails.
    d) Marcus was a man.
    e) Marcus was a Pompeian.
    f) All Pompeians were Romans.
    g) Caesar was a ruler.

h) All Romans were either loyal to Caesar or hated him.
i) Everyone is loyal to someone
j) People only try to assassinate rulers they are not loyal to.
k) Marcus tried to assassinate Caesar.

22. Describe all the different approaches for Knowledge Representation.
23. Compare the propositional and predicate logic?
24. Explain the Resolution in knowledge representation.
25. Explain the non monotonic reasoning in knowledge representation.
26. Explain the monotonic reasoning in knowledge representation.
27. Explain the backward chaining algorithms?
28. Explain the Resolution for first order logic or inference rule?
29. Explain instances and its relationship.
30. Illustrate the first order logic in knowledge representation?

UNIT – 4

31. Explain the various forms of learning.
32. How is the learning process in a decision tree?
33. What are the various methods of logical formulation in logical learning?
34. How are explanation based learning done?
35. Elaborate upon inductive logic programming.
36. Write in detail about the Expert system.
37. Give an overview of a neural network.
38. Explain multilayer feed forward neural networks with an algorithm ?
39. Explain the nonparametric learning methods.
40. How learning is done on a complete data using statistical methods?

UNIT – 5

41. What is LISP?
42. What are the AI Programming Languages?
43. Why LISP is used for AI Programming.
44. Mention what are the three functions required by LISP?
45. What is the programming structure for LISP?

.Net Technologies (BCA505)

Unit-I

Q.1 What is .Net framework? Explain architecture of .Net framework.

Q. 2 What type of applications can be created using .Net technologies? What is the web services?

Q. 3 What is the CLR in .Net Framework? What are the responsibilities of CLR.How Garbage collection is done?

Q.4 What are the advantages of .net technologies, how it helps to make your life as developer easier?

Q.5 Describe the features of Visual Studio2008.Give the steps to create a simple window application.

Q. 6 What type of applications can be created using .Net technologies? What is the web services?

Q.7 Write Short Notes on four of the following"

(a)Namespace

(b)FCL

(c)CTS

(d) ASP.NET

(e)Foreach Loop

Q.8 (a) differentiate between Reference Types and Value Types

(b)What is the boxing and unboxing in C#?explain.

Q.9 (a) What is the C#?explain the caractaristics of C#.

(b)What are the access-specifiers available in C#?

Q.10 Describe the structure of a C# Program with proper code-structure. Explain the jump statements available in C#.

Unit-II

Q.1 Discuss VB.NET features? Benefits? Drawbacks?

Q.2 Discuss data types in Visual Basic.NET.

Q.3 What is the difference between comparison operators and logical operators? Explain the use of both operators with an example.

Q.4 How do you create a project in Visual Basic.NET? What is the Acive X controls in VB.net.

Q.5 explain the Following in VB.net:

(a) Select case

(b) Computer memory concepts,

(c) decision-making statements

(d) control structures

Q.6 Explain the looping in VB.Net with while/when, do while/loop and do until/loop.

Q.7 What is the repetition structures.? Explain counter-controlled repetition and sentinel-controlled repetition with example.

Q.8 What is If-Then-End If structure? Write its general form with an example.

Q.9 Give an example to illustrate the usage of VarType () functions.

Q.10 Explain the VB math function.

Unit-III

Q.1 Differntiate between Visual Basic and Visual Basic.Net.

Q.2 How can a Sub procedure pass data back to the calling code?

Q.3 explains Use of string concatenation operators with example. List three statements that will cause an immediate exit from a procedure?

Q.4 What is a function? How is it declared and called?

Q.5 How can you declare and initialize an array of integers named a so that it holds the values 1,2,3, and 4 in one statement? Explain the concept of dynamic arrays?

Q.6 What is the difference between function and a procedure?

Q,7 How is a control array created at design time and run time?what is the param Array.

Q.8 Explain the Following:

(a) date and time functions

(b) convert values from strings

(c) String Comparission

Q.9 Write a VB.net program to explain any one of sorting technique.

Q.10 (a) explain the exit sub and exit function statements

(b) write a VB.net program to demonstrate the recursion

Unit-IV

Q.1 What is Threads? Explain the life cycle of Thread.

Q.2 How .net framework supports multiple languages? Explain the various features of .net framework.

Q.3 What data providers are in ADO.Net,Explain the basic objects of ADO.Net wich are used to access the Database?

Q.4 How data is accessed in.NET? Give the code of connection string to connect with MS access database.

Q.5 Distinguish between ADO and ADO.NET .

Q.6 What is the managed code in .NET? Describe the important features of MSIL.

Q.7 Discuss the concept of Thread, Describe Multithreading with examples.

Q.8 Write Short Notes on the Following:

(a)Data Adaptor object (b)DataReader Object

(c)Dataset (d)ExecuteNonQuery Method

(e)CommandObject

Q.9 What is the mean of lanuage interopratability,How it acieved in .Net framework?wat is the advantages of language interoperatibility?

Q.10 What is the Graphics Programming? How to create graphics object for drawing in .net , explain with an example.

Managerial Personality Development (BCA 507)

UNIT-1

1. What do you understand by personality management and explain the need of this.
2. How to give a self introduction?
3. What do you understand by a good personality?
4. How can you achieve a good personality? Explain with examples.
5. What do you understand by inter-personal skills?
6. Explain the importance of inter-personal skills.
7. How you can improve your skills?
8. How can you develop your self confidence?
9. What are the benefits of self confidence?
10. What are the benefits of positive Thinking?

UNIT-2

1. What are the basic etiquettes explain it?
2. Explain the meeting skills at official level?
3. Explain the meeting and greeting skills?
4. What are the mobile etiquettes?
5. Explain the fax manners?
6. What do you understand by e-mail manners?
7. How is useful e-mail to any one? Explain the benefits of e-mail process.
8. How is necessary dining etiquettes?
9. Explain the effect of dining etiquettes in day today life.
10. What is the importance of various manners in our life explain it in detail?

UNIT-3

1. What do you understand by stress management?
2. What do you understand by time management?
3. Explain the importance of time management.
4. What is wardrobe management?
5. Explain the wardrobe management?
6. What are the benefits of time management and wardrobe management?
7. How to handle a difficult boss?
8. How to handle difficult clients?
9. Why is necessary a management in day today life and how it effects?
10. Explain various types of management in day today life/

UNIT-4

1. What do you understand by public speaking?
2. How is public speaking important?
3. Explain the effectiveness of public speaking

4. What do you understand by presentation skills?
5. Explain the various presentation skills.
6. What do you understand by voice modulation?
7. Explain the need of voice modulation.
8. What do you understand by body language?
9. How the body language can be effective?
10. What is difference between voice modulation and body language?

UNIT-5

1. What is need of letter writing?
2. Explain the format of basic letter writing?
3. What are the various interview skills? Explain all these.
4. What is GD?
5. Explain the all GD tips.
6. What is Mock GD?
7. Explain mock GD in detail.
8. What is difference between GD and Mock GD?
9. What do you understand by personal interview?
10. Write short notes on
    a) Group Discussion
    b) Personal Interviews
    c) Group Discussion