Punyashlok Ahilyadevi Holkar Solapur University, Solapur

B.Sc(ECS) I Semester I

Fundamentals of programming using C and C++ - I

Q. No. 1) Answer any four of the following (for 2 marks)

1) What do you mean by POP?

2) What do you mean by OOP?

3) Define variable and constant.

4) What is data type?

5) What is the use of header file in a program?

6) What is the use of printf() and scanf()?

7) What is the use of cin and cout?

8) Why we use comment in C and C++?

9) What is function?

10) What are the features of function?

11) Explain command line arguments.

12) Define array with example.

13) Define structure. Give one example

14) What is union?

15) Define pointer.

16) What are the advantages / features of pointer?

17) What do you mean by dereferencing a pointer?

18) Differentiate between normal variable and pointer variable.

19) What is keyword?

20) What is the use of void in program?

Q. No. 2) Write short notes any two of the following (4 marks)

1) Differentiate between POP and OOP

2) Explain the history of C and C++.

3) Differentiate between C and C++

4) What is unary operator and binary operator?

5) Differentiate between break and continue statement

6) What is character array? Give example.

7) Differentiate between structure and union.

8) What is array of structure?

9) Give an example of passing structure to function.

10)Differentiate between pointer and reference

11)Explain structure with union as member with example.

12)Explain union with structure as member with example.

Q. No. 3) Answer any two of the following (8 marks)

1) Differentiate between conditional and iterative statement.

2) Explain loop control statement with example.

3) Differentiate between while and do while loop

4) Explain jump statement or unconditional control statement.

5) What is nested loop? Give example.

6) Explain types of user defined function with example.

7) Write a program to display factorial of a number

8) Write a program to display Fibonacci series

9) Write a program to check a number is prime or not

10) Write a program to count number of vowels in a string.

11) Write a program to search an element into an array.

12) Write a program to display addition of two matrix.

Q. No. 4) Answer any one of the following (for 8 marks)

1) Explain all operators used in C and C++

2) Explain bitwise operators with example.

3) Differentiate between call by value and call by reference with example.

4) What is an array? Explain types of arrays with example. What are the advantages and disadvantages of using array?

5) Write a program to display prime numbers between 1 to 100

6) Write a program to display Armstrong numbers between 1 to 500

7) Write a program to check a number is perfect or not using function.

8) Write a program to display first 10 prime numbers

9) Write a program for multiplication of two matrices

10)Write a program to create a menu driven program

a) Transpose of a matrix b) Diagonal elements of a matrix

Punyashlok Ahilyadevi holkar solapur University solapur

Question Bank class-B.sc (E.cs-I)

Sub – Digital Electronics-II Sem-II

Q.1 choose correct alternative (8 mark)

Q.2) Answer any four of the following (Each que.2 marks)

1 Define Flip Flop?
2 Define R-S Flip Flop?
3 Define D Flip Flop?
4Define T- Flip Flop?
5 Define J-K Flip Flop?
6 Define Master Slave Flip Flop?
7 Define Counter?
8 Define Synchronous Counter?
9 Define Asynchronous Counter/
10 Define Ripple Counter?
11Define Parallel Counter?
12 Define Triggering of Flip flop?
13 Define preset and clear in Flip flop?
14Define Johnson counter?
15 Define Ring counter?
16 Define Modulus of Counter?
17 Define MOD 10 counter?
18Define MOD 5 counter?
19 Define Mod 2 counter?
20 Define Memory?
21Write different types of memory.
22 Define Volatile Memory?
23 Define Nonvolatile Memory?
24 Define PROM?
25 Define EPROM?
26 Define EEPROM?
27 Define ADC?
28Define DAC?
29 Write different types of ADC?
30 Write different types of DAC?

Q.3 Answer any two of the following (Each question carries 4 marks)

1. Write note on R-S Flip Flop?
2 Explain difference between level and Edge triggered flip flop?
3 Explain action of shift register as ring counter?
4 Explain action of shift register in PIPO mode?
5 Explain action of shift register in PISO mode?
6 Explain action of shift register in SIPO mode?
7 Explain action of shift register in SISO mode?
8 Explain 3 bit up Synchronous counter?
9 Explain Asynchronous Counter?
10 Explain 3 bit down Synchronous counter?
11 Write note on J-K Flip Flop?
12 Explain 3 bit down Asynchronous counter?
13 Explain 3 bit up Asynchronous counter?
14 Explain up down synchronous counter?
15 Explain pin configuration of IC 7490?

Q.4 Answer any two of the following (Each question carries 4 marks)

1. Explain pin configuration of IC 7495?
2 Draw and Explain Binary weighted network?
3 Draw and Explain R2R ladder network?
4 Draw and explain successive approximation ADC method?
5 Draw and explain Dual slope ADC?
6 What is mean by ADC? Explain any one in brief?
7 Write down different specification of ADC?
8 Write note on EPROM and EEPROM memory?
9 Define Resolution, Linearity, and Accuracy, Error of ADC?
10 Draw and Explain pin configuration of RAM memory chip?
11 Draw and Explain Dot Matrix PROM?
12Write note on Flash memory?
13 Write note on Shift register?
14 Write note on race around condition of flip flop?
15 write down application of ADC and DAC?

Q.5 Answer any One of the following (Each question carries 8 marks)

1 Define semiconductor memory and explain its different types in brief?
2 what is mean by Flip flop? Write down its different type? Explain J-K Flip flop in brief?

3 what is mean by Flip flop? Write down its different type? Explain R-S Flip flop in brief?
4. What is mean by Shift register? Write down its different types? Explain any two types in brief?
5 What is mean by counter? Write its different types? Explain in brief 3 bit Asynchronous counter?
6 What is mean by ADC and DAC? Explain any two types of ADC in brief?
7 what is mean by Memory cell? Explain types of Memory in brief?
8 Write brief note on memory devices RAM, ROM, EPROM, EEPROM and UVPROM?
9 What is mean by Volatile and Nonvolatile Memory? Explain diode matrix ROM in brief?
10 Explain 3 bit Synchronous up and 3 bit Asynchronous down counter in brief?

Punyashlok Ahilyadevi Holkar Solapur University,Solapur

B.Sc(ECS) I Semester I

Programming using C and C++ II

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1) Answer any four of the following (for 2 marks)

1) What do you mean by static memory allocation?

2) What is dynamic memory allocation?

3) What is the use of malloc() function?

4) What is the use of calloc() function?

5) What is the use of realloc() function?

6) What is the use of free() function?

7) What is the use of new and delete operator in c++?

8) What is ifstream?

9) What is ofstream?

10) What is fstream?

11) What are preprocessor directives?

12) Define macros.

13) What is class?

14) Define constructor. Give example

15) Give the syntax and example for class definition.

16) What is data member?

17) What is member function?

18) What is destructor?

19) Give the syntax and example for destructor.

20) What is the difference between private and public keyword?

2) Answer any two of the following (for 4 marks)

1) Differentiate between static memory allocation and dynamic memory Allocation

2) How static memory allocation is achieved in C and C++?

3) How dynamic memory allocation is achieved in C ?

4) How dynamic memory allocation is achieved in C++ ?

5) What are the benefits of dynamic memory allocation over static memory allocation?

6) Write program to create a dynamic array and display greatest element form array.

7) What is a file? Which operations we can perform on a file?

8) Explain all preprocessor directives supported by C .

9) What are the principles of OOP?

10) Which are access specifiers supported by C++?

11) Differentiate between operator overloading and function overloading?

12) Explain the types of function overloading with example.

13) What is inheritance? Give example

14) What is polymorphism? Give example

15) What is virtual function? Give example.

16) What is pure virtual function? Give example

17) What do you mean by “do-nothing” function? Give example.

18) Differentiate between multilevel and multiple inheritance.

19) What is exception handling? Give example.

20) Define exception? Explain types of exception with example.

21) What is constructor? How it is differ from a normal function?
Give example.

22) Explain the rules for constructor.

23) Explain with example object as parameter.

24) What is class template? Give example.

25) What is the use of try catch block in C++?

26) What do you mean by rethrowing an exception?

4) Answer any one of the following (for 8 marks)

1) How dynamic memory allocation is achieved in C and C++? Explain with example.

2) What is constructor? What are the rules for constructor? Explain constructor overloading with example.

3) Write a program to overload assignment(=) operator.

4) Write a program to overload unary minus(-) operator.

5) What is polymorphism? Explain the types of polymorphism? How it is achieved in C++? Give example.

6) What is inheritance? Explain types of inheritance with example.

7) Write a C++ program to perform following actions on an array entered by the user:
i) Print the even-valued elements
ii) Print the odd-valued elements
iii) Calculate and print the sum and average of the elements of array

The program should present a menu to the user and ask for one of the options. The menu should also include options to re-enter array and to quit the program.

8) Write a menu driven program in C++ to perform following operations on strings:
a. Show address of each character in string
b. Concatenate two strings without using strcat function.
c. Concatenate two strings using strcat function.
d. Compare two strings

9) Create the Person class. Create some objects of this class (by taking information from the user). Inherit the class Person to create two classes Teacher and Student class. Maintain

the respective information in the classes and create, display and delete objects of these two classes (Use Runtime Polymorphism).

10) Create a class Triangle. Include overloaded functions for calculating area. Overload assignment operator and equality operator.

P.A.H. SOLAPUR UNIVERSITY SOLAPUR
B.Sc. (E.C.S) II SEM III CBCS (w.e.f. JUNE 2020-21) EXAMINATION
SUBJECT-DATA STRUCTURE USING C++ I MARKS-40

Question Bank

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2 MARKS QUESTIONS

1. Define Tree.
2. List out advantages of Tree.
3. Define Binary Tree.
4. Define Leaf Node.
5. Define Non Leaf Node.
6. Define Degree of node.
7. Define Level of node.
8. Define Depth of Tree.
9. Define Ancestors.
10. Define Descendants.
11. Define Strictly Binary Tree.
12. Define Full Binary tree.
13. Define Extended Binary Tree.
14. Define Binary Expression Tree.
15. Define Heap Tree.
16. Define BST.
17. What Is Pre-Order Traversal?
18. What Is In-Order Traversal?
19. What Is Post-Order Traversal?
20. Define AVL Tree.
21. List Applications of Binary Tree.
22. Define Graph.
23. Define Directed Graph
24. Define Undirected Graph
25. Define Weighted Graph
26. Define Adjacent vertices
27. Define Path
28. Define Closed path
29. Define Simple path
30. Define Cycle

31. Define Shortest path
32. Define Length of path
33. Define cyclic graph
34. Define source node
35. Define sink node
36. Define pendant node
37. Define Loop
38. Define Multiple edge
39. Define Multi graph
40. Define Indegree
41. Define Outdegree
42. Define Sorting
43. Define Serching.

4 MARKS QUESTIONS

1. Explain Heap Tree with its types.
2. Represent any Binary Tree Using Linked List.
3. Represent any Binary Tree Using Array.
4. Write search () in Binary Tree.
5. Write count_total_nodes () in Binary Tree.
6. Write count_leaf_node () in Binary Tree.
7. Write count_non_leaf_node () in Binary Tree.
8. What is tree? What are the advantages of tree over linked list?
9. Write search() in Binary Tree.
10. Explain Graph with its types.
11. What is Graph? Write its different applications
12. What is Adjacency Matrix? Represent any directed and undirected graph by

    using adjacency matrix.
13. What are the difficulties in graph traversal?
14. Write a note on Simple Exchange sort
15. Write a note on Bubble Sort
16. Write a note on Straight Selection sort
17. Write a note on Partition exchanged sort (Quick sort)
18. Write a note on Shell sort (Diminishing increment sort)

19. Write a note on Insertion sort
20. Write a note on Merge sort
21. Write a note on Radix sort.
22. Write a note on Heap Sort.
23. Explain Hashing and Hash Funcion.
24. Write a note on Truncation method
25. Write a note on Mid-Square method
26. Write a note on Folding Method
27. Write a note on Modulus Method
28. Write a note on Hash function for floating point number.
29. Sort following numbers using bubble sort method with all passes

    15,45,36,47,12,89,74,92,10,5
30. Sort following numbers using radix sort method with all passes

    90,105,75,48,85,115,50,65,38,7

8 MARKS QUESTIONS

1. What is Binary Search tree? Explain the process to insert new node in binary search tree with its algorithm.
2. What is traversal? Explain different tree traversal methods with its operations.
3. What is Binary tree? Explain various types of binary trees
4. What is Binary Search tree? Explain the process to insert new node in binary search tree with its algorithm.
5. Explain the node delete operation of Binary search tree in details
6. Explain, how we can represent graph by using adjacency list (by using linked list) with one example.
7. Explain BFS traversal of graph.
8. Explain DFS traversal of graph.
9. Explain Dijkstra's algorithm to find shortest path between two vertices.
10. What is searching? Explain categories of searching with advantages and disadvantages
11. Explain Indexed sequential search in details.

Punyashlok Ahilyadevi Holkar Solapur University, Solapur
B.Sc. (ECS)-II -(Sem-IV) (CBCS)
Subject:-Optimization Techniques
Question Bank

Q.1 Answer any four of the following 08

1 What is transportation problem?

2 Define decision variable.

3 Write the formula to find opportunity cost for unoccupied cells.

4 Convert the following A.P. of maximization type into minimization type

	I	II	III
P	4	27	12
Q	31	9	21
R	17	4	26

5 Define surplus variables in L.P.P

6 Give the methods of finding I.B.F.S. in T.P.

7 Write the formula to find index number for occupied cells

8 Define objective function

9 What is Assignment problem?

10 Define basic feasible solution

11 What is O.R.

12 What is objective of solving A.P. and T.P.?

13 Define balanced and unbalanced A.P.

14 Write the formula for finding opportunity cost for unoccupied cell.

15 Define feasible region.

16 Define slack variables in L.P.P

17 Define constraints.

18 Define standard form of L.P.P.

19 Define a loop in T.P.

20 Define alternate solution of A.P.

Q.2 **Attempt any two of the following** 08

1 Write structure of 3 × 4 T.P. in details.

2 How A.P. of maximization type is converted into minimization type?

3 Explain North West Corner method

4 Solve A.P. for minimum cost

		Jobs		
		I	II	III
Persons	A	7	3	5
	B	2	7	4
	C	6	5	3
	D	3	4	7

5 Explain Simplex method.

6 A person is planning to buy to machines A and B. He can buy at most 8 machines in all. He needs at least 3 machines of type A and at least 2 of type B. He can buy not more than 5 machines of type A and not more 4 machines of type B. He earns a profit of Rs. 100 on machine A and Rs. 50 on machine B. Formulate the given LPP.

7 Write the difference between A.P. and T.P.

8 Write dual of L.P.P.
Max $Z = 6x_1 + 11x_2$
Subject to $2x_1 + x_2 \leq 104$; $x_1 + 2x_2 \leq 76$; $x_1, x_2 \geq 0$

9 State the scope and limitations of O.R.

10 When we arrive at optimum solution in case of T.P. and A.P.

Q.3 Answer any Two of the following 08

1 Find I.B.F.S. of the following T.P. by least-cost method

	Q	R	S	T	a_i
A	6	5	8	5	30
B	5	11	9	7	40
C	8	9	7	13	50
b_j	35	28	32	25	120

2 Explain canonical form of L.P.P. with suitable example.

3 Find I.B.F.S. by North-West corner method :

Destination → / Sources ↓	W_1	W_2	W_3	W_4	Capacity
F_1	19	30	50	10	7
F_2	70	30	40	60	9
F_3	40	8	70	20	18
Demand	5	8	7	14	34

4 Explain Matrix –Minima method

5 Solve the following L.P.P. by graphical method.
Maximize $Z = 2x + 4y$
Subject to, $x + 2y \leq 5$; $x + y \leq 4$; $x, y \geq 0$

6 Solve the following A.P for minimum cost

	A	B	C	D
1	10	25	15	20
2	15	30	05	15
3	35	20	12	24
4	17	25	24	20

7 Solve the following L.P.P. by graphical method.
Minimize $C= 4x+5y$ subject to $4x+3y\geq16$; $x+2y\geq 9$; $x>0$,$y>0$

8 Write the steps for solving L.P.P by Graphical method.

9 Find I.B.F.S. by VAM

	W1	W2	W3	W4	ai
F1	90	90	100	100	200
F2	50	70	130	85	100
bj	75	100	100	30	

10 Solve the following A.P

	A	B	C	D	E
M1	9	11	15	10	11
M2	12	9	∞	10	9
M3	∞	11	14	11	7
M4	14	8	12	7	8

Q.4 Answer any one of the following 08

1 Describe the Hungarian Method for solving A.P.

2 Find IBFS by VAM and find an optimal solution of the following T.P.

	D1	D2	D3	D4	D5	ai
O1	50	80	60	60	30	800
O2	40	70	70	60	50	600
O3	80	40	60	60	40	2500
bj	400	400	500	400	8000	

3 Solve the L.P.P. by simplex method :
Maximize : $z = 3x + 2y$,
Subject to : $x + y \leq 4$; $x - y \leq 2$; $x, y \geq 0$

4 Write a note on Degeneracy in T.P.

5 Solve the following A.P. for maximize the profit.

Jobs	Machines				
1	A	B	C	D	E
2	32	38	40	28	40
3	40	24	28	21	36
4	41	27	33	30	37
5	29	33	40	35	39

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

B.Sc(ECS) I Semester I

Fundamentals of programming using C and C++ - I

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2) What do you mean by OOP?

3) Define variable and constant.

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5) What is the use of header file in a program?

6) What is the use of printf() and scanf()?

7) What is the use of cin and cout?

8) Why we use comment in C and C++?

9) What is function?

10) What are the features of function?

11) Explain command line arguments.

12) Define array with example.

13) Define structure. Give one example

14) What is union?

15) Define pointer.

16) What are the advantages / features of pointer?

17) What do you mean by dereferencing a pointer?

18) Differentiate between normal variable and pointer variable.

19) What is keyword?

20) What is the use of void in program?

Q. No. 2) Write short notes any two of the following (4 marks)

1) Differentiate between POP and OOP

2) Explain the history of C and C++.

3) Differentiate between C and C++

4) What is unary operator and binary operator?

5) Differentiate between break and continue statement

6) What is character array? Give example.

7) Differentiate between structure and union.

8) What is array of structure?

9) Give an example of passing structure to function.

10)Differentiate between pointer and reference

11)Explain structure with union as member with example.

12)Explain union with structure as member with example.

Q. No. 3) Answer any two of the following (8 marks)

1) Differentiate between conditional and iterative statement.

2) Explain loop control statement with example.

3) Differentiate between while and do while loop

4) Explain jump statement or unconditional control statement.

5) What is nested loop? Give example.

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8) Write a program to display Fibonacci series

9) Write a program to check a number is prime or not

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11) Write a program to search an element into an array.

12) Write a program to display addition of two matrix.

Q. No. 4) Answer any one of the following (for 8 marks)

1) Explain all operators used in C and C++

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4) What is an array? Explain types of arrays with example. What are the advantages and disadvantages of using array?

5) Write a program to display prime numbers between 1 to 100

6) Write a program to display Armstrong numbers between 1 to 500

7) Write a program to check a number is perfect or not using function.

8) Write a program to display first 10 prime numbers

9) Write a program for multiplication of two matrices

10)Write a program to create a menu driven program

a) Transpose of a matrix b) Diagonal elements of a matrix

Punyashlok Ahilyadevi holkar solapur University solapur

Question Bank class-B.sc (E.cs-I)

Sub – Digital Electronics-II Sem-II

Q.1 choose correct alternative (8 mark)

Q.2) Answer any four of the following (Each que.2 marks)

1 Define Flip Flop?
2 Define R-S Flip Flop?
3 Define D Flip Flop?
4Define T- Flip Flop?
5 Define J-K Flip Flop?
6 Define Master Slave Flip Flop?
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10 Define Ripple Counter?
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12 Define Triggering of Flip flop?
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14Define Johnson counter?
15 Define Ring counter?
16 Define Modulus of Counter?
17 Define MOD 10 counter?
18Define MOD 5 counter?
19 Define Mod 2 counter?
20 Define Memory?
21Write different types of memory.
22 Define Volatile Memory?
23 Define Nonvolatile Memory?
24 Define PROM?
25 Define EPROM?
26 Define EEPROM?
27 Define ADC?
28Define DAC?
29 Write different types of ADC?
30 Write different types of DAC?

Q.3 Answer any two of the following (Each question carries 4 marks)

1. Write note on R-S Flip Flop?
2 Explain difference between level and Edge triggered flip flop?
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12 Explain 3 bit down Asynchronous counter?
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14 Explain up down synchronous counter?
15 Explain pin configuration of IC 7490?

Q.4 Answer any two of the following (Each question carries 4 marks)

1. Explain pin configuration of IC 7495?
2 Draw and Explain Binary weighted network?
3 Draw and Explain R2R ladder network?
4 Draw and explain successive approximation ADC method?
5 Draw and explain Dual slope ADC?
6 What is mean by ADC? Explain any one in brief?
7 Write down different specification of ADC?
8 Write note on EPROM and EEPROM memory?
9 Define Resolution, Linearity, and Accuracy, Error of ADC?
10 Draw and Explain pin configuration of RAM memory chip?
11 Draw and Explain Dot Matrix PROM?
12Write note on Flash memory?
13 Write note on Shift register?
14 Write note on race around condition of flip flop?
15 write down application of ADC and DAC?

Q.5 Answer any One of the following (Each question carries 8 marks)

1 Define semiconductor memory and explain its different types in brief?
2 what is mean by Flip flop? Write down its different type? Explain J-K Flip flop in brief?

3 what is mean by Flip flop? Write down its different type? Explain R-S Flip flop in brief?
4. What is mean by Shift register? Write down its different types? Explain any two types in brief?
5 What is mean by counter? Write its different types? Explain in brief 3 bit Asynchronous counter?
6 What is mean by ADC and DAC? Explain any two types of ADC in brief?
7 what is mean by Memory cell? Explain types of Memory in brief?
8 Write brief note on memory devices RAM, ROM, EPROM, EEPROM and UVPROM?
9 What is mean by Volatile and Nonvolatile Memory? Explain diode matrix ROM in brief?
10 Explain 3 bit Synchronous up and 3 bit Asynchronous down counter in brief?

Punyashlok Ahilyadevi Holkar Solapur University,Solapur

ECS-II SEM-III (CBCS-2020)

Paper- SEC1 Introduction to Python Programming

Question Bank

Q.2) Answers any four of the following. (2 marks for each question)

1) Define module.
2) Define Default Constructor
3) Define list with example
4) Define search () Function
5) Define class method
6) Write down syntax for range() function
7) Define module
8) Define static Method
9) Write down syntax for tuple declaration
10) List out various data types in python
11) Define Instance Method
12) What are Formal parameters?
13) Write use of input() function with example
14) Define Inheritance?
15) Define Lambda function
16) Write use of pass keyword with example
17) What are Actual parameters?
18) Write down syntax of Creating a Function
19) Define dictionary
20) Write down syntax for dictionary declaration

Q. 3) Write short notes on any two of the following.(4 marks for each question)

1) Characteristics of python
2)Write a program to check given number is palindrome or not
3) Explain various manipulations on tuple
4)Explain read(), readlines() methods
5)Write a program to check large number between three numbers
6) Constructors in python
7)Explain all numeric data types used in python
8)What is String? Explain any 4 manipulations of String with example
9)Explain write(), writelines() methods
10)What is Tuple? Explain any 4 manipulations ofTuple with example

Q. 4) Answers any two of the following. (4 marks for each question)

1) Explain abstract class and abstract method
2)Explain random module
3) Write a program to implement hierarchical inheritance
4) Explain time module
5)What is exception? Explain at least 3 in built exceptions in python

6) Define regular expression. Explain various metacharcters
7)Explain types of methods in python.
8)Explain math module
9)What is a Namespace in Python? Explain in detail.
10)Explain try...finally block with example

Q.5). Answer <u>any one</u> of the following. (8 marks for each question)

1)Explain Operator precedence and associativity in python
2) Define file. Explain various file operations
3) List decision making statements, write a program by using nested if—else to find large number between three numbers
4)What are the directory. Explain various operations on directory
5) Write a program to find out given number is positive/negative odd/even

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B.Sc(ECS) - III Sem - V Advanced Java Question Bank(CBCS, 2021-22)

Q - 2 Solve any Eight of the following **16**

1) What is JDBC ?
2) What is UDP ?
3) What is Deployment descriptor ?
4) List out advantages of JSP over servlet.
5) Define methods of JTextArea.
6) What is cookies ?
7) Difference between statement and prepared Statement.
8) List out advantages of Java Networking.
9) Describe CallablStatement.
10) Mention the advantages and disadvantages of using Java Sockets.
11) Explain the use of JSTL core tag with the help of an example.
12) List the JSTL tags.
13) What is the role of RequestDispatcher Interface in Servlet?
14) What is the role of attribute in servlets?
15) What is Session Tracking? What are the common methods of Session Tracking?
16) Does JSP allow the use of exception implicit object in any page?
17) Define Static Initializer.
18) How is transaction different from distributed transaction?
19) Mention the different transactional attributes?
20) What is Servlet API?
21) Define Session Tracking?
22) The Major Stages of JSP Life Cycle?
23) List of Implicit objects?
24) List Type of Directive Tags?
25) List of JSP Action tags?
26) define Meta Data? its components in JDBC.
27) What is the difference between TCP and UDP?
28) What are the key steps in reading from a URL connection?
29) What is a network interface?
30) What are Datagram's and Sockets?
31) What is the difference between execute, executeQuery, executeUpdate?
32) How to delete a Cookie in a JSP?
33) How is JSP better than Servlet technology?
34) What is difference between Swing and AWT in Java?
35) What is difference between BorderLayout and GridLayout ?
36) Why Swing is called light weight ?
37) What is difference between Container and Component ?
38) What Is The Difference Between Applications And Applets?
39) List Layoutmanagers In Java.
40) Which Is The Super Class Of All Event Classes?

41) What Are The Advantages Of The Event-delegation Model Over The Event-inheritance Model?
42) List Lifecycle Method Of An Applet?
43) What Method Is Used To Specify A Container's Layout?
44) What Is An Event Handler In Swing?
45) Which package has light weight component?
46) List Container classes?
47) What method is used to specify a container's layout?
48) List Components subclasses that support painting?
49)List the containers which use Border Layouts as their default layout?
50) What is the purpose of the enableEvents() method?

Q - 3 A) Short answer question(Any Two) 12

1) Explain JDBC drivers.
2) Explain the applet life cycle.
3) Explain the servlet life cycle.
4) Explain session management in servlet.
5) What are the attributes of applet tag?
6) Explain JSTL XML Tags.
7) What is Cookies? Explain use of 'Cookies' in servlet.
8) Explain JDBC architecture in detail.
9) Write a servlet to display "Hello" message (use doGet( )).
10) Explain different types of JSP implicit objects.
11) Write a program to design an applet to check whether number is Armstrong or not. (take no. from textbox).
12) Explain ServletContext interface.
13) Explain action element in JSP.
14) What are the advantages of JSP over Servlet.
15) Explain different types of implicit object in JSP.

Q- 3 B) Short Answer question 4

1) ResultsetExtractor.
2) Prepared Statement.
3) Callable Statement.
4) Datagram Programming.
5) TCP/IP Programming.

Q - 4 Long Answer question(Any Two) 16

1) Create a jsp page that will display current data and time and also display how many times user visited to the page.
2) Write a program to delete the records of employee having designation as "Supervisor" by using PreparedStatement interface in JDBC template class.
3) Write a program to demonstrate session tracking in JSP.
4) Explain the architecture of JSP.
5) Explain different types of implicit object in JSP.

6) Write a program to create simple calculator by Swing Library.
7) Explain types of JSTL SQL tags.
8) What is session ? Explain session management through servlet.
9) Write a program to design an applet that displays the following shapes.
   1) circle 2) triangle 3) rectangle 4) oval 5) line.
10) Write a demonstration program to use of include () and forward () method of 'RequestDispatcher'
11) Explain servlet API.
12) Write a program to navigation (last, first, next, previous) employeerecords such as eid, ename, designation, DOB, etc from employee table.
13) Explain JSP directive tags with example.
14) Write a program to implements HTTP request POST method in servlet.
15) Write a program of design an applet that display image in applet.

Q - 5) Long Answer question (Any Two) **16**

1) Write a demonstration program to use of 'CallableStatement' interface
2) What is servlet? Explain features and advantages of servlet.
3) Write a program to demonstrate the use of GenericServlet and HttpServlet .
4) List the advantages and disadvantages of HttpSession.
5) What is Cookies? Explain advantages and disadvantages and use of 'Cookies' in Servlet with example.
6) What is an Applet? Explain Applet HTML tags.
7) Explain exception handing in JSP with suitable example.
8) Write a swing program to demonstrate the use of JButton,JTextbox,JRadiobutton, Jcheckbox.
9) Write a servlet to that demonstrate use of 'HttpSession object'.
10) Explain types of JDBC drivers with suitable example.
11) Explain Tree Table & Menus component in swing with suitable example.
12) Write a swing program to design a registration form.
13) Write a java program which perform DML operation on table.
14) Write a java program which execute stored procedure.
15) Write a java program to demonstrate the use of Socket class & ServerSocket class,

B.Sc.(ECS)-I Sem.-II
(Introduction to Web Designing - I)

Question Bank

Sample questions for 2 marks

1) What are different heading tags?

2) What is multimedia?

3) What is WWW?

4) What is web site?

5) What is HTML?

6) What is Internet?

7) Define Web standards?

8) Why create a web site?

9) What is navigation bar?

10) List out any four web browsers.

11) What is page design?

12) What is target audience?

13) Write different heading tags.

14) Use
 tag.

15) What is hypertext?

16) Types of navigation bar

17) What are the benefits of after created a web site?

18) Use of heading tags

19) What is web browser?

20) Which tag is used for super script?

21) Which tag is used for sub script?

22) Which tag and attribute is used for change the font size in HTML?

23) Use of Web site.

24) Which software is required for create and run a HTML file?

25) Who invented the HTML?

Sample questions for 4,8 marks

1) Explain different basic principles to developing a web site?

2) Write and explain five golden rules of web designing.

3) What are the steps to create an HTML document?

4) Explain types of navigation bar with example.

5) Explain home page layout.

6) Draw and explain basic structure of HTML document.

7) Explain different HTML text formatting tags with example.

8) Write the history of internet.

9) Explain body tag with its attributes.

10) What are the different application of internet?

11) Write short note on target audience?

12) What are the basic principles of developing a web site?

13) What is the use of five golden rules?

14) How to create a an HTML document?

15) Draw and explain standard home page layout ?

16) What are the different mark up tags?

17) What are the different types of HTML tags? Explain with example.

18) Short note on internet?

19) Explain body tag attributes with example.

20) How to set image on web page background ? Explain with example.

B.Sc.(ECS)-III (Sem-V) (New w.e.f Nov 2021) Examination

Advanced Python Programming
Paper No- XIII
Question bank

Model Question for 2 marks

1. Define IP address.
2. Write a short note on Label.
3. What are advantages of GUI?
4. How to bind event?
5. Write a short note on Checkbutton.
6. What is use of series in python?
7. List out the method in root class.
8. What is cookies?
9. What is HTTP header?
10. List out different methods in Thread.
11. What is difference between list and tuple?
12. What are the advantages of Multithreading?
13. What is Deamon thread?
14. Write a note on Lock.
15. What is role of CGI environment variable?
16. What are the advantages of CGI?
17. Write a note Histogram.
18. What is use of Label?
19. write a note on Frame.
20. Define multithreading.
21. Write a note on RLock.
22. What is socket?
23. What are disadvantages of CGI?
24. What is xml?
25. What is difference between html and xml?
26. Write a note on Get method.
27. What is use of cursor?
28. How to create database in MySql by using Python?
29. List out different server
30. Write a note on matplotlib module in python.
31. What is container?
32. Write a note on Post method.
33. What is CGI?
34. What is DTD in xml python?
35. What is DataFrame in python?
36. What is the fields in Cookies?
37. Write a note on XML validation.
38. How to install matplotlib ?
39. What are advantages of numpay ?

40. Write a note on Boxplot.

Model Question for 4/5 marks

1. What is difference between Get and Post method?
2. Write a program to demonstrate use of Label.
3. Explain Density plot in Python.
4. Explain Scatter plot in Python.
5. Explain XML parsing methods.
6. What is client side socket? Explain methods for client side socket.
7. How to create TCP/IP server? explain with example
8. What is Thread synchronization? Which are methods for Thread synchronization.
9. Write a program to demonstrate use of Button.
10. Write a program to display Density plot.
11. Write a program for display series in python.
12. Write a note on *socket module.*
13. Explain CGI architecture with diagram.
14. Write a program to print IP address.
15. How to GUI programming in python? Write different methods.
16. Write advantages of GUI programming.
17. Write a program for creating series in python.
18. Write a program for simple python client for chatting.
19. How to upload file in python explain with example.
20. Explain Font object with different options.
21. Explain color object with different options.
22. Write a python program to draw a line.
23. Explain Entry widget.
24. Write a program to demonstrate Radiobutton.
25. What is RLock/ explain with example.

Model Question for 6/8 marks

1. What are steps for database connectivity? Explain.
2. Write a detailed note on Tkinter.
3. Explain CGI architecture for python.
4. Explain Histogram with example.
5. Explain XML parser with example
6. Write a python program to update data into student table.
7. Explain multithreading in Python?
8. Explain methods in Thread class with example.
9. Explain panda's module.
10. How to import data from excel file? Explain with example.
11. Explain Univariate, Bivariate and Multivariate data.
12. Write a program to demonstrate use of DataFrame.
13. Explain CGI Environment Variables.
14. What is Cookies? Explain types of cookies.
15. Write a python program to demonstrate use of MySql procedure.
16. What are built-in layout managers in Tkinter ? explain any one with example.
17. Explain Binds in Tkinter.
18. How to Avoiding Deadlock in python multithreading.
19. Menu widget in python.
20. Write a procedure for installing MySQL.

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B.Sc(ECS) I Semester I

Programming using C and C++ II

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1) Answer any four of the following (for 2 marks)

1) What do you mean by static memory allocation?

2) What is dynamic memory allocation?

3) What is the use of malloc() function?

4) What is the use of calloc() function?

5) What is the use of realloc() function?

6) What is the use of free() function?

7) What is the use of new and delete operator in c++?

8) What is ifstream?

9) What is ofstream?

10) What is fstream?

11) What are preprocessor directives?

12) Define macros.

13) What is class?

14) Define constructor. Give example

15) Give the syntax and example for class definition.

16) What is data member?

17) What is member function?

18) What is destructor?

19) Give the syntax and example for destructor.

20) What is the difference between private and public keyword?

2) Answer any two of the following (for 4 marks)

1) Differentiate between static memory allocation and dynamic memory Allocation

2) How static memory allocation is achieved in C and C++?

3) How dynamic memory allocation is achieved in C ?

4) How dynamic memory allocation is achieved in C++ ?

5) What are the benefits of dynamic memory allocation over static memory allocation?

6) Write program to create a dynamic array and display greatest element form array.

7) What is a file? Which operations we can perform on a file?

8) Explain all preprocessor directives supported by C .

9) What are the principles of OOP?

10) Which are access specifiers supported by C++?

11) Differentiate between operator overloading and function overloading?

12) Explain the types of function overloading with example.

13) What is inheritance? Give example

14) What is polymorphism? Give example

15) What is virtual function? Give example.

16) What is pure virtual function? Give example

17) What do you mean by “do-nothing” function? Give example.

18) Differentiate between multilevel and multiple inheritance.

19) What is exception handling? Give example.

20) Define exception? Explain types of exception with example.

21) What is constructor? How it is differ from a normal function?
Give example.

22) Explain the rules for constructor.

23) Explain with example object as parameter.

24) What is class template? Give example.

25) What is the use of try catch block in C++?

26) What do you mean by rethrowing an exception?

4) Answer any one of the following (for 8 marks)

1) How dynamic memory allocation is achieved in C and C++? Explain with example.

2) What is constructor? What are the rules for constructor? Explain constructor overloading with example.

3) Write a program to overload assignment(=) operator.

4) Write a program to overload unary minus(-) operator.

5) What is polymorphism? Explain the types of polymorphism? How it is achieved in C++? Give example.

6) What is inheritance? Explain types of inheritance with example.

7) Write a C++ program to perform following actions on an array entered by the user:
i) Print the even-valued elements
ii) Print the odd-valued elements
iii) Calculate and print the sum and average of the elements of array

The program should present a menu to the user and ask for one of the options. The menu should also include options to re-enter array and to quit the program.

8) Write a menu driven program in C++ to perform following operations on strings:
a. Show address of each character in string
b. Concatenate two strings without using strcat function.
c. Concatenate two strings using strcat function.
d. Compare two strings

9) Create the Person class. Create some objects of this class (by taking information from the user). Inherit the class Person to create two classes Teacher and Student class. Maintain

the respective information in the classes and create, display and delete objects of these two classes (Use Runtime Polymorphism).

10) Create a class Triangle. Include overloaded functions for calculating area. Overload assignment operator and equality operator.

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B.Sc(ECS)-I SEM-I (CBCS-2019)

Paper-C1 Fundamentals of Programming using C & C++ -I

Question Bank

Q.2) Answers any four of the following. (2 marks for each question)

1) What is union?
2) List out various keyword used in c language.
3) What is the use of <stdio.h> header file
4) Write down syntax of self referential structure with example
5) Write down syntax of scanf() & printf() function.
6) What do you mean by OOP?
7) Differentiate normal variable and pointer
8) List out various data types in c++ language.
9) What are the advantages of pointer
10) What is the use of <conio.h> header file
11) What are the advantages of function?
12) Write rules for variable declaration.
13) Define function prototype
14) What is the use of cin and cout?
15) Define pointer with example.
16) What do you mean by POP?
17) Define constant with example.
18) What is function?
19) Write down syntax of structure with example
20) Define structure. Give one example

Q. 3) Write short notes on any two of the following.(4 marks for each question)

1) Explain switch case statement
2)Explain the history of C
3) Explain bitwise operators
4)What is unary operator and binary operator?
5)Differentiate between break and continue statement
6) Explain forward jump and backward jump in jumping statement
7) Write a program to implement passing structure to function.
8) Explain the history of C++
9) Differentiate call by value and call by reference
10)Differentiate C and C++ language

Q. 4) Answers any two of the following. (4 marks for each question)

1) Explain concept of pointer to pointer
2) Define array. Write a program for addition of 2X2 matrix

3) Explain operators used in C and C++
4) Write a program to display prime numbers between 1 to 100
5)Explain comparison operators with example.
6)Write a program to find out given number is strong or not
7) Write a program to display Armstrong numbers between 1 to 500
8) Write a program to check a number is perfect or not
9)Write a program to print fibonacci series upto given number
10)Explain logical operators with example.

Q.5). Answer <u>any one</u> of the following. (8 marks for each question)

1) Define function. Explain various types of user defined function
2)What is nested loop? Implement program for nested loop
3) Define structure. Write a program by using structure to display information of five students
4)What is an array? Explain types of arrays with example. What are the advantages and disadvantages of using array?
5)Write a program by using switch case to find out areas of circle,triangle,rectangle,square

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B.Sc(ECS)- III (Semester – VI) Examination

Computer Science (New w.e.f. Nov 2021) New CBCS

System Security (paper– XIV)

Question Bank 80 marks

Question For 2 Marks

1) Define computer security
2) What is a digital signature?
3) What is a public-key certificate?
4) What are four means of authenticating a user's identity?
5) Define the three classes of subject in an access control system?
6) Define the terms database management system and query language?
7) What is a "logic bomb"?
8) What are typical phases of operation of a virus or worm?
9) Define a distributed denial-of-service (DDoS) attack.
10) Define a reflection attack.
11) What is System Security?
12) What is mean by Access Control Principles
13) What is a message authentication code?
14) What are two common techniques used to protect a password file?
15) What is an access right?
16) What is a protection domain?
17) What is Database Security?
18) What is mean by Attacks?
19) Define the term Viruses?
20) Define the term Spyware
21) What is mean by Phishing?
23) Define Flooding Attacks
24) Define Cloud Security
25) What is mean by Database Access Control?
26) Define Inference
27) Define Statistical Databases
28) Define Database Encryption
29) Define Subjects and Objects
30) What is mean by Access Rights?
31) What is mean by Discretionary Access Control?
32) What is mean by Application-Based Bandwidth Attacks?
33) What is mean by Reflector Attacks?
35) Define Amplifier Attacks?

36) How Can i Avoid Spyware?
37) What Is Authenticode?
38) Explain About User Security?
39) Define Rootkits.
40) Define Viruses.

Question for 3 marks

1) Explain Database Encryption?
2) Explain Flooding Attacks?
3) Explain Public-Key Encryption?
4) Explain Denial-of-Service Attacks?
5) Explain Countermeasures?
6) Explain Propagation?
7) Explain Trojans?
8) Explain Payload–System Corruption?
9) Explain Payload–Attack Agent–Zombie?
10) Explain Bots?
11) Payload– Information?
12) Theft– Keyloggers?
13) Explain Flooding Attacks
14) Explain Distributed Denial-of-Service Attacks
15) Explain Responding to a Denial-of-Service Attack

Question For 4 Marks

1) What are two common techniques used to protect a password file?
2) Explain the Means of Authentication?
3) What is a relational database and what are its principal ingredients?
4) In the context of access control, explain a subject and an object?
5) List and explain four common techniques for selecting or assigning passwords?
6) Explain the difference between a simple memory card and a smart card.
7) Explain Role - Based Access Control in access control?
8) Explain The Need for Database Security?
9) Explain Social Engineering–SPAM E-mail?
10) Explain Flooding Attacks with types of Flooding Attacks
12) Explain Database Access Control in database Security

Question For 5 Marks

1) Explain Message Authentication and Hash Functions in detail?
2) Define the User Authentication? Explain Electronic Identity Cards and smart card in Token-Based Authentication?

3) Explain Access Control Context and Access Control Policies in Access Control Principles?
4) What is Confidentiality? Explain Confidentiality with Symmetric Encryption?
5) What is Authentication? Explain Password-Based Authentication?
6) Explain the Need for Database Security?
7) Explain Defenses Against Denial -of-Service Attacks,\
8) Explain Propagation–Vulnerability Exploit–Worms
9) Explain UNIX File Access Control
10) Explain Propagation– Infected Content–Viruses
11) Explain Payload–Stealthing–Backdoors?
12) Explain Cloud Security in database security

Question For 8 Marks

1) What is biometric authentication? Explain Physical Characteristics Used in Biometric Applications and Operation of a Biometric Authentication System.
2) What is Malicious Software? Explain Types of Malicious Software?
3) Explain Denial-of-Service Attacks in detail?
4) What is Confidentiality? Explain Confidentiality with Symmetric Encryption?
5) Explain DBMS Architecture with suitable diagram.
6) Explain Reflector and Amplifier Attacks in details.
7) Explain Relational Databases with example in database Security
8) Explain Case Study: RBAC System for a Bank in Access Control
9) Explain Distributed Denial-of-Service Attacks in detail
10) Explain Database Access Control in database security in detail?
11) Define Password Explain Password-Based Authentication
12) What is Authentication protocol? Explain Electronic Identity Cards with digram?

Nature of Question Paper for choice based credit system (CBCS)
Subject:- *Database Management System*
B.Sc. (ECS)- II Sem- IV (w. e. f. June 2019)
Question Bank

Time: - 2 hrs. **Total Marks-40**

Q.No.2) Answer any four of the following *(08)*

1. *Checkpoints in recovery*
2. *DDL*
3. *Domain*
4. *Define deadlock in DBMS*
5. *Updated Read*
6. *Instances*
7. *Aggregation*
8. *Cardinality*
9. *Transaction*
10. *Schemas*
11. *Cartesian Product*
12. *Set difference*
13. *Outer Join*
14. *Project Operation*
15. *Relation Schema*
16. *Rollback*
17. *Weak Entity*
18. *Multi-valued Attribute*
19. *Relationship*
20. *DML*

Q.No.3 A) Write short notes on any two of the following *(08)*

1. *Explain time stamp based protocol.*
2. *Explain Cost Estimates in Query Optimization.*
3. *Explain Data Independence.*
4. *Explain shadow paging.*
5. *Explain conflict serializability.*
6. *Explain Relational Model*
7. *Explain Limitations of traditional file system.*
8. *Explain Database languages.*
9. *Explain recovery with concurrent transaction.*
10. *Explain Generalization and Specialization.*

Q. No.4) Answer any Two of the following *(08)*

1. *Explain Heuristics in Query Optimization. Cost Estimates*
2. *Explain log base recovery.*
3. *Explain ACID properties.*
4. *Explain Advantages of DBMS.*
5. *Explain transaction states.*
6. *Explain view serializability.*
7. *Explain Query Processing.*
8. *Explain lock based protocol.*
9. *Elaborate Database Users.*
10. *Explain join in detail.*

Q.No.5) Answer any one of the following *(08)*

1. *What do you mean by DBMS? Explain its type in detail.*
2. *Explain Database Structure in detail.*
3. *Explain ER-model and its components with proper diagram.*
4. *Explain Components of DBMS.*
5. *Explain Database Architecture in detail.*

Answer Key

Q.1

1	**d**
2	**a**
3	**d**
4	**a**
5	**b**
6	**b**
7	**c**
8	**b**

Q.No.2) Answer any four of the following *(08)*

i) Checkpoints in recovery

Diagram carry 1 mark and explanation carry 1 mark

ii) Generalization and Specialization

Explanation carry 2 mark

iii) Define deadlock in DBMS

Definition carry 2 mark

iv) Instances and Schemas

Explanation carry 2 mark

v) Cost Estimates in Query Optimization

Explanation carry 2 mark

vi) Define Transaction

Definition carry 2 mark

Q.No.3 A) Write short notes on any two of the following *(08)*

i) Explain timestamp based protocol.

Explanation carries 4 marks

ii) Explain conflict and view serializability.

Explanation of conflict and view equivalent each carry 2 marks

iii) Explain Database Architecture.

Diagram carry 1 mark and explanation carry 3 marks

Q. No.4) Answer any Two of the following *(08)*

i) Explain Database Structure.

Diagram carry 1 mark and explanation carry 3 marks

ii) Explain log base recovery.

Diagram carry 1 mark and explanation carry 3 marks

iii) Explain ACID properties.

Explanation of each point carries 4 marks

Q.No.5) Answer any one of the following *(08)*

i) What do you mean by DBMS? Explain its type in detail.

Definition carries 2marks and types carry 6 marks

ii) Explain ER-model and its components with proper diagram.

Explain ER-model and entity, attributes and relation carries 8 marks.

Nature of Question Paper for choice based credit system (CBCS) Semester Pattern

B.Sc. (ECS)- II Sem- IV

Subject:- Linux OS and Shell Scripting

Question Bank

Time: - 2 hrs. **Total Marks-40**

Q.No.2) Answer any four of the following *(08)*

1. Trace route
2. Boot Block
3. Finger
4. Copy
5. Ls -la
6. grep
7. DHCP
8. *Premature termination of process*
9. Super Block
10. Sort
11. Find
12. *Ping,*
13. *finger*
14. kill
15. Inode Block
16. LDAP
17. ln
18. Piping
19. Uniq
20. Move
21. Rm -R

Q.No.3 A) Write short notes on any two of the following *(08)*

1. *Explain process Boot Loaders.*
2. *Explain* communication commands.
3. *Explain I/O and Redirection.*
4. *Explain metacharacters in Shell.*
5. *Explain Linux Distributions.*
6. *Explain* assigning permissions to users and Groups
7. *Explain* printing files lpr, lpq and lprm in Linux.
8. *Explain* working environments.
9. *Explain premature termination of process.*
10. *Changing process priority with nice*

Q. No.4) Answer any Two of the following *(08)*

1. *Explain Protocols and Services in networking.*
2. *Explain* Text Editors
3. *Explain Shell and its type.*

4. *Explain Role of system administrator.*
5. *Explain* Archive and File compression commands.
6. *Explain Architecture of Linux.*
7. *Explain* File and Directory permissions (chmod, chown, chgrp).
8. *Explain* background and foreground process.
9. *Explain* Shell Variables.
10. *Explain File and Directory permissions.*

Q.No.5) Answer any one of the following *(08)*

1. *Explain Linux commands (mkdir, rmdir, cd, pwd, ls, cat) syntaxes with output.*
2. *Explain History of Linux & features.*
3. *Explain* Shell Control and Loop structure.
4. *Explain Linux commands (more, less, head, tail, cut paste) syntaxes with output.*
5. *Explain Shell* Control and Loop structure.

Nature of Question Paper for choice based credit system (CBCS)
B.Sc. (ECS)- II Sem- IV
Subject:- Operating System
Question Bank

Time: - 2 hrs. **Total Marks-40**

Q.No.2) Answer any four of the following *(08)*

1. *Deadlock Recovery*
2. *Threads*
3. *Non-preemptive*
4. *CSCAN disk*
5. *System Calls*
6. *Swapping*
7. *disk scheduling*
8. *Real-Time*
9. *boot block*
10. *Overlays in memory*
11. *Critical Regions*
12. *Disk reliability*
13. *SCAN Disk*
14. *Multiprogramming*
15. *demand paging*
16. *Preemptive*
17. *Page fault*
18. *Physical address*
19. *Thrashing*
20. *Distributed OS*

Q.No.3 A) Write short notes on any two of the following *(08)*

1. *Explain Process Control Block.*
2. *What is Scheduling? Explain its criteria.*
3. *Elaborate Dinning Philosopher Problem.*
4. *Solve Optimal Page replacement algorithm given Reference String-*

2	3	4	2	1	3	7	5	4	3

   Find out total miss and hits.
5. *Explain Race Conditions.*
6. *Explain Memory partitioning: Fixed and Variable.*

7. *Explain Operations of Process.*
8. *Explain Logical &Physical address Space*
9. *What is Fragmentation? Explain it in detail.*
10. *Explain Directory structure in detail.*

Q. No.4) Answer any Two of the following *(08)*

1. *What is Semaphores? Explain Signal() and wait()Semaphore operations.*
2. *Explain Allocation methods.*
3. *Solve given problem using Shortest Job First (SJF) Scheduling algorithm.*

Process	Arrival Time	CPU Burst Time (in millisec.)
P0	3	2
P1	2	4
P2	0	6
P3	1	4

Calculate Turnaround Time and Average Waiting Time.

4. *What is disk reliability?*
5. *Explain Memory partitioning: Fixed and Variable, Contiguous*
6. *Explain Free-space management.*
7. *Elaborate File Access Mechanisms in OS.*
8. *Explain Multilevel Queue.*
9. *Explain Context switching.*
10. *Explain Critical Section Problem.*

Q.No.5) Answer any one of the following *(08)*

1. *Explain Methods of Handling Dead Locks.*
2. *What is Page Replacement policy? Solve Least Recently Used (LRU) given Reference String.*

   7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1

   Find out total miss and hits.
3. *Define Operating System. Explain any 3 types of OS. (Batch, Time-Sharing, Real-Time, Parallel)*

4. *Solve given problem using Round Robin Scheduling algorithm.*

CPU Scheduling Example:

Process	Arrival Time	Burst Length
P_1	22	18
P_2	4	6
P_3	16	10
P_4	2	32
P_5	10	17

For the Round Robin scheduling algorithm, the time quantum is 10.

Calculate Turnaround Time and Average Waiting Time.

5. *What is disk scheduling? Solve given example using FCFS, SSTF method.*

Example:

1. *Suppose the order of request is- (82,170,43,140,24,16,190)*
   And current position of Read/Write head is : 50

P.A.H. SOLAPUR UNIVERSITY SOLAPUR
B.Sc. (E.C.S) II SEM III CBCS (w.e.f. JUNE 2020-21) EXAMINATION
SUBJECT-DATA STRUCTURE USING C++ I MARKS-40

Question Bank

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2 MARKS QUESTIONS

1. Define Tree.
2. List out advantages of Tree.
3. Define Binary Tree.
4. Define Leaf Node.
5. Define Non Leaf Node.
6. Define Degree of node.
7. Define Level of node.
8. Define Depth of Tree.
9. Define Ancestors.
10. Define Descendants.
11. Define Strictly Binary Tree.
12. Define Full Binary tree.
13. Define Extended Binary Tree.
14. Define Binary Expression Tree.
15. Define Heap Tree.
16. Define BST.
17. What Is Pre-Order Traversal?
18. What Is In-Order Traversal?
19. What Is Post-Order Traversal?
20. Define AVL Tree.
21. List Applications of Binary Tree.
22. Define Graph.
23. Define Directed Graph
24. Define Undirected Graph
25. Define Weighted Graph
26. Define Adjacent vertices
27. Define Path
28. Define Closed path
29. Define Simple path
30. Define Cycle

31. Define Shortest path
32. Define Length of path
33. Define cyclic graph
34. Define source node
35. Define sink node
36. Define pendant node
37. Define Loop
38. Define Multiple edge
39. Define Multi graph
40. Define Indegree
41. Define Outdegree
42. Define Sorting
43. Define Serching.

4 MARKS QUESTIONS

1. Explain Heap Tree with its types.
2. Represent any Binary Tree Using Linked List.
3. Represent any Binary Tree Using Array.
4. Write search () in Binary Tree.
5. Write count_total_nodes () in Binary Tree.
6. Write count_leaf_node () in Binary Tree.
7. Write count_non_leaf_node () in Binary Tree.
8. What is tree? What are the advantages of tree over linked list?
9. Write search() in Binary Tree.
10. Explain Graph with its types.
11. What is Graph? Write its different applications
12. What is Adjacency Matrix? Represent any directed and undirected graph by

    using adjacency matrix.
13. What are the difficulties in graph traversal?
14. Write a note on Simple Exchange sort
15. Write a note on Bubble Sort
16. Write a note on Straight Selection sort
17. Write a note on Partition exchanged sort (Quick sort)
18. Write a note on Shell sort (Diminishing increment sort)

19. Write a note on Insertion sort
20. Write a note on Merge sort
21. Write a note on Radix sort.
22. Write a note on Heap Sort.
23. Explain Hashing and Hash Funcion.
24. Write a note on Truncation method
25. Write a note on Mid-Square method
26. Write a note on Folding Method
27. Write a note on Modulus Method
28. Write a note on Hash function for floating point number.
29. Sort following numbers using bubble sort method with all passes

    15,45,36,47,12,89,74,92,10,5
30. Sort following numbers using radix sort method with all passes

    90,105,75,48,85,115,50,65,38,7

8 MARKS QUESTIONS

1. What is Binary Search tree? Explain the process to insert new node in binary search tree with its algorithm.
2. What is traversal? Explain different tree traversal methods with its operations.
3. What is Binary tree? Explain various types of binary trees
4. What is Binary Search tree? Explain the process to insert new node in binary search tree with its algorithm.
5. Explain the node delete operation of Binary search tree in details
6. Explain, how we can represent graph by using adjacency list (by using linked list) with one example.
7. Explain BFS traversal of graph.
8. Explain DFS traversal of graph.
9. Explain Dijkstra's algorithm to find shortest path between two vertices.
10. What is searching? Explain categories of searching with advantages and disadvantages
11. Explain Indexed sequential search in details.

Nature of Question Paper for choice based credit system (CBCS)

B.Sc. (ECS)- II Sem- III

Subject:- *Software Testing*

Question Bank

Time: - 2 hrs. **Total Marks-40**

Instructions:

1. All questions are compulsory.

2. Draw **neat diagrams** *and give* **equations** *wherever necessary.*

3. Figures to the **right** *indicate* **full marks***.*

4. Use of logarithmic table and calculator is allowed.

Q.No.2) Answer any four of the following *(08)*

1. *Buddy Testing*
2. *Reporting*
3. *Verification*
4. *System Testing*
5. *Soak Testing*
6. *Beta*
7. *Load Testing*
8. *Error guessing*
9. *Volume Testing*
10. *Validation*
11. *Smoke Testing*
12. *Test Planning*
13. *Decision Table*
14. *Non-Incremental*
15. *Retest*
16. *Monkey Testing*
17. *Usability Testing*
18. *Peer review*
19. *NOT Function*
20. *Alpha*

Q.No.3 Write short notes on any two of the following *(08)*

1. *Differences between Manual and Automation Testing.*
2. *Explain Advantages & Disadvantages of WBT.*
3. *Explain Integration Testing and types.*
4. *Difference between Failure and Error.*
5. *Explain Types of Test Cases.*
6. *What is Software Testing? Importance or need of software testing.*
7. *Explain State Transition Technique in BBT.*
8. *Explain Types of Bugs.*
9. *Explain experienced Based Techniques.*
10. *Design test case for login page.*

Q. No.4) Answer any Two of the following *(08)*

1. *Explain Regression Testing and its types.*
2. *Explain Static Techniques in WBT.*
3. *Explain Difference between Bug and Defect.*
4. *Explain Top-Down, Bottom-Up Testing type.*
5. *Explain Advantages & Disadvantages of BBT.*
6. *Explain Test Case and write a test case with any examples.*
7. *Design test case for Online shopping in detail.*
8. *Explain Use Case Testing in detail.*
9. *Write Test Execution Report and Summary Report.*
10. *Explain Defect Logging and Tracking.*

Q.No.5) Answer any one of the following *(08)*

1. *Explain Boundary Value Analysis, Equivalence Class Partition and Cause Effective Graph in BBT.*
2. *Explain Statement Coverage Testing, Branch Coverage Testing, Path Coverage Testing in WBT.*
3. *Explain Performance Testing and its types.*
4. *Explain Software Test Life Cycle in detail.*
5. *Write Test Plan and Prepare Traceability Matrix.*

Punyashlok Ahilyadevi Holkar Solapur University, Solapur
B.Sc. (ECS)-II -(Sem-IV) (CBCS)
Subject:-Optimization Techniques
Question Bank

Q.1 Answer any four of the following 08

1 What is transportation problem?

2 Define decision variable.

3 Write the formula to find opportunity cost for unoccupied cells.

4 Convert the following A.P. of maximization type into minimization type

	I	II	III
P	4	27	12
Q	31	9	21
R	17	4	26

5 Define surplus variables in L.P.P

6 Give the methods of finding I.B.F.S. in T.P.

7 Write the formula to find index number for occupied cells

8 Define objective function

9 What is Assignment problem?

10 Define basic feasible solution

11 What is O.R.

12 What is objective of solving A.P. and T.P.?

13 Define balanced and unbalanced A.P.

14 Write the formula for finding opportunity cost for unoccupied cell.

15 Define feasible region.

16 Define slack variables in L.P.P

17 Define constraints.

18 Define standard form of L.P.P.

19 Define a loop in T.P.

20 Define alternate solution of A.P.

Q.2 **Attempt any two of the following** 08

1 Write structure of 3 × 4 T.P. in details.

2 How A.P. of maximization type is converted into minimization type?

3 Explain North West Corner method

4 Solve A.P. for minimum cost

		Jobs		
		I	II	III
Persons	A	7	3	5
	B	2	7	4
	C	6	5	3
	D	3	4	7

5 Explain Simplex method.

6 A person is planning to buy to machines A and B. He can buy at most 8 machines in all. He needs at least 3 machines of type A and at least 2 of type B. He can buy not more than 5 machines of type A and not more 4 machines of type B. He earns a profit of Rs. 100 on machine A and Rs. 50 on machine B. Formulate the given LPP.

7 Write the difference between A.P. and T.P.

8 Write dual of L.P.P.
Max $Z = 6x_1 + 11x_2$
Subject to $2x_1 + x_2 \leq 104$; $x_1 + 2x_2 \leq 76$; $x_1, x_2 \geq 0$

9 State the scope and limitations of O.R.

10 When we arrive at optimum solution in case of T.P. and A.P.

Q.3 Answer any Two of the following 08

1 Find I.B.F.S. of the following T.P. by least-cost method

	Q	R	S	T	a_i
A	6	5	8	5	30
B	5	11	9	7	40
C	8	9	7	13	50
b_j	35	28	32	25	120

2 Explain canonical form of L.P.P. with suitable example.

3 Find I.B.F.S. by North-West corner method :

Destination → / Sources ↓	W_1	W_2	W_3	W_4	Capacity
F_1	19	30	50	10	7
F_2	70	30	40	60	9
F_3	40	8	70	20	18
Demand	5	8	7	14	34

4 Explain Matrix –Minima method

5 Solve the following L.P.P. by graphical method.
Maximize $Z = 2x + 4y$
Subject to, $x + 2y \leq 5$; $x + y \leq 4$; $x, y \geq 0$

6 Solve the following A.P for minimum cost

	A	B	C	D
1	10	25	15	20
2	15	30	05	15
3	35	20	12	24
4	17	25	24	20

7 Solve the following L.P.P. by graphical method.
Minimize $C= 4x+5y$ subject to $4x+3y\geq16$; $x+2y\geq 9$; $x>0$,$y>0$

8 Write the steps for solving L.P.P by Graphical method.

9 Find I.B.F.S. by VAM

	W1	W2	W3	W4	ai
F1	90	90	100	100	200
F2	50	70	130	85	100
bj	75	100	100	30	

10 Solve the following A.P

	A	B	C	D	E
M1	9	11	15	10	11
M2	12	9	∞	10	9
M3	∞	11	14	11	7
M4	14	8	12	7	8

Q.4 Answer any one of the following 08

1 Describe the Hungarian Method for solving A.P.

2 Find IBFS by VAM and find an optimal solution of the following T.P.

	D1	D2	D3	D4	D5	ai
O1	50	80	60	60	30	800
O2	40	70	70	60	50	600
O3	80	40	60	60	40	2500
bj	400	400	500	400	8000	

3 Solve the L.P.P. by simplex method :
Maximize : $z = 3x + 2y$,
Subject to : $x + y \leq 4$; $x - y \leq 2$; $x, y \geq 0$

4 Write a note on Degeneracy in T.P.

5 Solve the following A.P. for maximize the profit.

Jobs	Machines				
1	A	B	C	D	E
2	32	38	40	28	40
3	40	24	28	21	36
4	41	27	33	30	37
5	29	33	40	35	39

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

BSc(ECS)-III Sem (V)

Subject: Data Communication and Networking

Question Bank

Time: 3 Hrs. *Total Marks: 80*

Instructions:

i) All questions are compulsory.

ii) Draw neat labelled diagrams wherever necessary.

iii) Figures to right indicate full marks.

iv) Use of log table and calculators is allowed.

Q. 2) Solve any Eight of the following. *(16)*

1. *Network*
2. *Burst error*
3. *Negative ACK*
4. *Bandwidth*
5. *Resource Allocation*
6. *Error Detection*
7. *Gateways*
8. *Flow Control*
9. *Retransmission*
10. *Reliability in network*
11. *Switch*
12. *Optimality*
13. *Request*
14. *Phase*
15. *Scalability*
16. *Stop ARQ*
17. *Analog Signal*
18. *Wavelength*
19. *Distortion*
20. *Response*
21. *Telnet*
22. *Bandwidth*
23. *Authentication*
24. *Connection oriented and connection less*
25. *Bridge*
26. *Addressing*
27. *Session Layer*
28. *Error Control*
29. *Hubs*
30. *Router*
31. *Buffering*
32. *Wait ARQ*

33. *Repeater*
34. *Transport*
35. *Framing*
36. *Single bit error*
37. *Parity Check*
38. *Positive ACK*
39. *Cipher Text*
40. *TLS*

Q. 3) A) Attempt any **Two** *of the following.* *(10)*

1. *Explain Parallel and Serial Transmission.*
2. *Explain Digital to Analog Conversion*
3. *Explain Design issues of Data Link Layer.*
4. *Difference between TCP and UDP.*
5. *Explain internet Protocol with diagram.*
6. *Explain Routing in detail.*
7. *Explain Back - Bone Networks in detail.*
8. *Explain Analog to digital conversion.*
9. *Explain Error Correction Techniques.*
10. *Explain CSMA and CSMA/CD.*

Q. 3) B) *(06)*

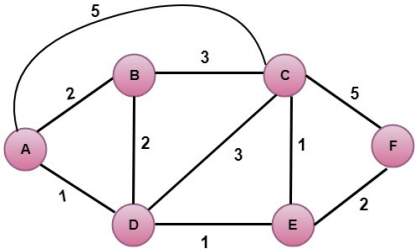
1. *Explain Digital to Digital Line Encoding Schemes.*
2. *Explain Error Recovery Protocol (Stop and Wait ARQ, Go-Back-N ARQ).*
3. *Explain Multiplexing Techniques- FDM, TDM in detail.*
4. *Explain Hybrid and Mesh topology in detail.*
5. *Explain LAN Ethernet with advantages and disadvantages in detail.*

Q. 4 A) Attempt any **Two** *of the following.* *(08)*

1. *Explain data rate limits in signals.*
2. *Explain Design issues of Network Layer.*
3. *Explain* RARP.
4. *Explain Analog and Digital Signal.*
5. *Explain pulse code modulation in detail.*
6. *Explain WAN with advantages and disadvantages in detail.*
7. *Explain Optimality Principle in detail.*
8. *Explain* WWW.
9. *Explain* Networks Layer Functions *in detail.*
10. *Explain Code division multiplexing.*

Q. 4) B) *(08)*

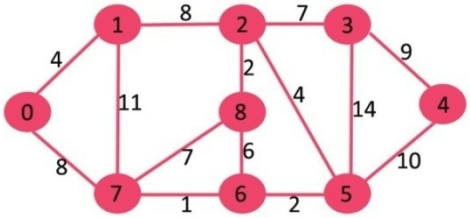
1. *Define Network and explain OSI reference model in detail.*
2. *Explain Link state Routing algorithm with example.*



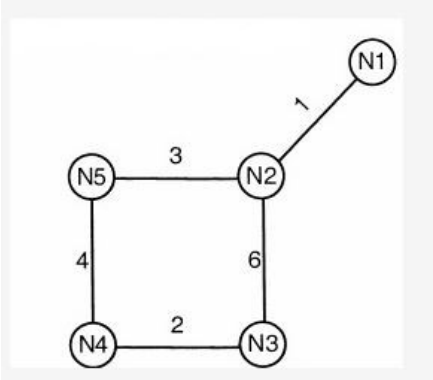
3. *Difference between Limited Broadcasting and Direct Broadcasting in broadcasting.*
4. *Explain Transmission Guided Media and Unguided Media in detail.*
5. *Explain* SMTP, POP and HTTP in detail.

Q. 5) Attempt any **Two** *of the following.* *(16)*

1. *Explain LAN, MAN, PAN Network types with advantages and disadvantages in detail.*
2. *Define Routing. Elaborate shortest path routing algorithm with given example.*



3. *Explain TCP/IP Protocol Suite in detail.*
4. *Explain Network Protocols.*
5. *Explain port Services(Error and Flow Control, Connection Establishment and Connection Release, Flow Control & Buffering) in detail*
6. *Explain Error Detection in detail.*
7. *Explain* FTP, DNS and Telnet in detail.
8. *Elaborate Distance vector routing algorithm with given example.*



9. *Explain Switching (Circuit, Message, and Packet Switching) in detail.*
10. *Explain Network Star, Ring, Bus and tree topologies with diagram.*

Punyashlok Ahilyadevi Holkar Solapur University, Solapur
BSc(ECS)-III Sem (VI)
Internet Programming using ASP.Net (w.e.f. June 2021)
Question Bank

Q. 2) Solve any **Eight** *of the following.* *(16)*

1. *Cookies*
2. *SOAP*
3. *Web User Control*
4. *Content page*
5. *Post back concepts*
6. *Update Progress*
7. *Timer*
8. *Page Directives*
9. *Site Navigation*
10. *Themes in Master Page*
11. *Processing Transactions*
12. *Update panel*
13. *Ad Rotator*
14. *Cross page posting*
15. *Hyperlink*
16. *Multi view control*
17. *Site Navigation*
18. *Nested Master pages*
19. *Update panel*
20. *Namespace*
21. *Assembly*
22. *Code render blocks*
23. *Cookies*
24. *Self-page posting*
25. *Script Manager*
26. Web Page
27. *Page Directives*
28. *Content page*
29. *Text Box*
30. *Control Panel*
31. *Web Service*
32. *Update panel*
33. *Radio Button List*
34. *State Management*
35. *Drop Down List Box*
36. *Hyperlink*
37. Application Folders
38. Web User
39. Post back

40. View State

Q. 3) A) Attempt any **Two** *of the following.* *(10)*

1. *Write the step of Attach XML file to tree view and menu.*
2. *What is Master Page? Explain Nested Master pages.*
3. *Explain event ordering of master pages.*
4. *Explain Web Site life cycle.*
5. *Explain View State in ASP.Net in detail.*
6. *Explain Different type of List controls.*
7. *Explain Validation Groups in detail.*
8. *Explain Data Sets on Web Forms.*
9. *Difference between session object and application object.*
10. *Explain Web Page life cycle.*

Q. 3) B) *(06)*

1. *Write steps of programmatically assigning master pages.*
2. *Explain Site Navigation Technique.*
3. *How to consume web services?*
4. *Explain Tree View and Menu Control in detail.*
5. *Explain validation controls in detail.*

Q. 4 A) Attempt any **Two** *of the following.* *(08)*

1. *Explain calendar controls with its properties.*
2. *Explain Client side State Management in detail.*
3. *Explain Processing Transactions in detail.*
4. *Explain Compilation Technique in ASP.Net.*
5. *How to attach XML file to tree view.*
6. *Explain Architecture of ASP.NET in detail.*
7. *What is Web Service? Explain Creating Web services in detail.*
8. *Explain need of master pages.*
9. *What is the difference between the ASP and ASP.NET?*
10. *Explain File Upload controls with its properties.*

Q. 4) B) *(08)*

1. *Explain ASP.Net Page Structure in detail.*
2. *Explain AJAX's Server side controls.*
3. *Explain Basic Themes and Skins and event ordering of master-pages.*
4. *Explain client side State Management.*
5. *Explain any 6 Standard web controls.*

Q. 5) Attempt any **Two** *of the following.* *(16)*

1. *Explain Types of validation.*
2. *Explain Server side State Management.*
3. *Write a program of DML commands in ADO.*
4. *Explain AJAX's Server side controls.*

5. *Explain SOAP, WSDL, and Proxy in web servers in detail.*
6. *Explain Rich Controls in detail.*
7. *Explain Ajax Control toolkit in detail.*
8. *Explain how to Implement AJAX with JavaScript.*
9. *Define Password, Button, Image Button, Check Box, Radio Button, Image Map, List Box, Multi View and Multi view control (any 8).*
10. *Explain Site Map and explain Nesting site map file in detail.*

Punyashlok Ahilyadevi Holkar Solapur University,Solapur
Exam
B.Sc. (ECS)-II (Sem-III) (CBCS)(w.e.f. June 2020)
Subject: - Introduction to Python programming

QUESTION BANK

Q. No.2) **Answer any four of the following**

1 What is variable? Differentiate Local & Global variable.
2 Define Characteristics of Lists.
3 Define array in python.
4 Define module in python.
5 What is Identifiers?
6 What is Advantage of Functions in Python?
7 Write down syntax of Creating a Function.
8 What is class variable and instance variable?
9 How to Create class in Python?
10 What is constructor?
11 Write down syntax and example of center () Method.
12 Define Default Constructor.
13 Define Lambda function
14 Define Instance Method
15 What is Inheritance?
16 What is File? List Different modes of file.
17 What is interface?
18 What are Actual parameters?
19 Define Method Overloading.
20 Define return statement.
21 What is Regular Expression?
22 What is use of super () method?
23 Define search () Function.
24 Define Static Method.
25 What are Formal parameters?
26 Define try- except statement.
27 What is module?
28 Define import statement.
29 Define method overriding.
30 What is use of break and continue?

Q. No.3) **Write short notes on any two of the following**

1. What is Tuple? Explain any 4 methods of Tuple with example.
2. Explain Looping statement with example.
3. Explain Difference between a Function and a Method.
4. Write a program to check given number is Armstrong or not.
5. Explain Math Module in detail.
6. Explain try- except statement with example.
7. Explain Characteristics of Python.
8. What is Operator Overloading? Explain Overloading binary + operator in Python.
9. What is String? Explain any 4 methods of String with example
10. Explain Types of Inheritance with example.

Q. No.4) **Answer any Two of the following**

1. What is exception? Explain at least 4 Built-in Exception with example
2. Explain Bit wise operators and Membership operators.
3. Explain types of methods in python.
4. Explain try...finally block with example.
5. Explain all numeric data types used in python.
6. What is Dictionaries? Explain any 4 methods of Dictionaries with example.
7. What is a Namespace in Python? Explain in detail.
8. What is function? Write a program to confirm entered no. is odd/even using function.
9. Explain Time module in detail.
10. What is List? Explain any 8 methods of List with example.

Q. No.5) **Answer any one of the following**

1. Explain different type conversion technique used in python.
2. Explain Types of functions in detail.
3. What are the Types of File? WAP to write data into file and read data from file.
4. Explain Abstract classes & Interfaces with Example.
5. Explain Operator precedence and associativity.

Punyashlok Ahilyadevi Holkar Solapur University,Solapur
Exam
B.Sc.(ECS)-II (Sem-IV) (New CBCS)(w.e.f. June 2020)
Subject: - MYSQL

QUESTION BANK

Q. No.2) Answer any four of the following

1 Write syntax and example of group by clause.
2 Define TRUNCATE command
3 Define DDL.
4 Define deleting data from table with example.
5 Use of DISTINCT clause.
6 Write syntax and example of create database.
7 Define WHERE Clause in MySQL.
8 Write syntax and example of INSERT INTO command.
9 Define CASE statement.
10 What is subquery in MySQL?
11 Write syntax and example of IF() function.
12 Write syntax and example of ORDER BY clause.
13 What is Table Level Constraints?
14 Define DML.
15 Write syntax and example of IFNULL()function
16 Explain Advantages and Disadvantages of Joins.
17 How to drop primary key constraint in MySQL?
18 Define CURDATE() Function.
19 What is view in MySQL?
20 Define CHAR_LENGTH() Function.
21 Write syntax and example of CHECK constraint in MySQL.
22 Define DCL.
23 Write syntax and example of CREATE NEW TABLE.
24 What is Column Level Constraints?
25 Write syntax and example of Index.
26 How to disable foreign key constraint in MySQL?
27 Define Stored Procedure Features.
28 Define DQL.
29 Write syntax and example of NOT NULL constraint.
30 Write syntax and example of between operator.

Q. No.3) **Write short notes on any two of the following**

1. Explain Math function with example.
2. Explain Trigger with example.
3. Explain Procedures with INOUT Parameter.
4. Explain DEFAULT constraint in MySQL with example.
5. Explain Import CSV File Into MySQL Table.
6. Explain Having clause with example.
7. Explain Numeric Data Type in MySQL.
8. Explain Procedures with IN Parameter.
9. Explain Primary key and Foreign key constraint with e.g.
10. Explain SAVEPOINT and ROLLBACK TO SAVEPOINT with example.

Q. No.4) **Answer any Two of the following**

1. Explain Inserting data into a table from another table.
2. Explain Procedures with OUT Parameter.
3. Explain Union, Union all, Minus and Intersect Set Operations with example.
4. What is Table Locking? Explain types of locks with example.
5. Explain String Data Types in MySQL.
6. Explain comparison functions in MySQL.
7. Explain ROLLUP in MySQL.
8. Explain Aggregate functions with example.
9. Explain Multi Row Subqueries with example.
10. Explain any 8 Date and Time function.

Q. No.5) **Answer any one of the following**

1. Explain CREATE, ALTER(ADD AND MODIFY), DROP on table with example.
2. Explain Import CSV File into MySQL Table and Export MySQL Table to CSV File with example.
3. What is Join? Explain types of Join with example.
4. Explain String functions with example.
5. Explain Stored Procedure with example.

Punyashlok Ahilyadevi Holkar Solapur University,Solapur
Exam
B.Sc. (ECS)-I (Sem-I) (CBCS)(w.e.f. June 2019)
Subject: - Fundamental of Computer System – I

QUESTION BANK

Q. No.2) Answer any four of the following

1 Define Information Technology.
2 What is System?
3 What are Advantages and Disadvantages of Information Technology?
4 What is Data?
5 Define Hardware.
6 Define UNIVAC.
7 Write short note on IT in Science and Engineering.
8 What is Information System?
9 What are the types of Computer- Based on Purpose?
10 Define Interpreter.
11 Write short note on Rule-based programming language.
12 Explain benefits of OOP.
13 Define Software.
14 What is Compiler?
15 Define Header File.
16 What is Assembler?
17 Define IT in Industry.
18 Define EDVAC.
19 What is Loader?
20 What are the types of information systems?
21 Define Editors.
22 List out characteristics of the computers.
23 What is Linker?
24 Define IT in Home.
25 Define Namespace.
26 Define The Atanasoff-Berry Computer.
27 Define Debuggers.
28 Define Computer.
29 What is Information?
30 What are Advantages and Disadvantages of First Generation Computers?

Q. No.3) **Write short notes on any two of the following**

1. Explain uses of IT in Education and Business.
2. Explain object-oriented programming.
3. Explain types of computer- based on size in detail.
4. Explain differences between Software and Hardware.
5. Explain any four types of Editors.
6. What are the advantages and disadvantages of Computer?
7. Explain Packages.
8. Explain evolution of computer.
9. Explain differences between Linker and Loader.
10. Write a Note on CLR and JVM.

Q. No.4) **Answer any Two of the following**

1. Write a Note on IDE and Assembler.
2. Explain differences between Imperative Programming and Declarative Programming.
3. Explain types of computer- based on purpose in detail.
4. Explain characteristics of computers.
5. Explain Header files used in C programming language in detail.
6. Explain differences between High-Level Language and Low-level language.
7. Explain any 2 generation of computer in detail.
8. Explain types of information systems in detail.
9. Explain differences between Data and Information.
10. Explain Namespace and packages.

Q. No.5) **Answer any one of the following**

1. Explain various types of Computers.
2. Explain Imperative and Declarative Programming Languages.
3. What are the capabilities of a Computer System?
4. Explain tools in software development kit.
5. Define Computer Language? Explain Types of Computer language.

Punyashlok Ahilyadevi Holkar Solapur University,Solapur
Exam
B.Sc. (ECS)-I (Sem-I) (CBCS)(w.e.f. June 2019)
Subject: - Fundamental of Computer System – II

QUESTION BANK

Q. No.2) Answer any four of the following

1 Define Control Unit.
2 What is mean by SMPS?
3 What is sequential access storage device and direct access storage device?
4 Define PCI SLOT.
5 What is Pointing input device?
6 Define Storage Unit.
7 Define Joystick.
8 What is application of MICR?
9 Define Fingerprint Scanner.
10 Definition of the Motherboard.
11 What is Audio input device?
12 What is meant by soft copy and hard copy output? Give examples of soft copy and hard copy output devices.
13 Define Video Input Device.
14 What is expansion slot?
15 Define Printer.
16 What is serial port?
17 Define Non-Impact Printer
18 Short note on laser printer.
19 Explain Advantages and Disadvantages of Plotters.
20 Define Arithmetic and Logical Unit.
21 Define LGA Sockets.
22 What is Parallel port?
23 Define Sensor Device.
24 Define DIMM slots.
25 Short note on inkjet printer.
26 Write down Applications of SMPS.
27 How data is stored on a CD-ROM?
28 Define CRT monitors
29 Define Optical Scanner.
30 Define CMOS battery.

Q. No.3) **Write short notes on any two of the following**

1. What is pointing device? Explain the types of mouse.
2. Explain Types of Sensor Device.
3. Explain Functions of the Motherboard.
4. Explain Motherboard Components in detail.
5. Explain Switched-Mode Power Supply (SMPS) in detail.
6. What is impact printer? Explain types of impact printer.
7. Explain the block diagram of computer.
8. What is Input Device? Explain types of keyboards.
9. What is the difference Between Virtual Reality and Augmented Reality?
10. What are different types of memory? Explain in details.

Q. No.4) **Answer any Two of the following**

1. What is printer? Explain Laser printer.
2. Explain Audio input device.
3. Explain difference between Serial and Parallel Port.
4. What is Primary Memory? Explain types of Primary Memory in detail.
5. Explain Advantages and Disadvantages of SMPS.
6. What is Secondary Memory? Explain types of Secondary Memory in detail.
7. Explain Bar- code readers.
8. Explain difference between Hard Copy and Soft Copy.
9. What is non-impact printer? Explain types of non-impact printer.
10. Explain Motherboard in detail.

Q. No.5) **Answer any one of the following**

1. Explain RAID and its levels 0, 1, 5, 6 and 10.
2. Explain different types of motherboard ports and their functions.
3. Explain different types of scanner in detail.
4. List the output device? Explain working of dot matrix printer.
5. Explain Soft Copy Output Devices in detail.

Punyashlok Ahilyadevi Holkar Solapur University,Solapur
Exam
B.Sc. (ECS)-II (Sem-III) (CBCS)(w.e.f. June 2020)
Subject: - Software Engineering

QUESTION BANK

Q. No.2) Answer any four of the following

1 What is System?
2 What are elements of system?
3 What are the guidelines for drawing DFD?
4 What is Deterministic system?
5 What is Probabilistic system?
6 What is Open system?
7 What is Closed system?
8 What is TPS?
9 What is System Analysis?
10 Who is System Analyst?
11 Definition of software engineering.
12 Write the difference between structured and unstructured interview.
13 What is model in SDLC?
14 What is Data Dictionary?
15 What are different fact finding techniques?
16 What is MIS?
17 Define Goals and Metrics.
18 Write down any four Advantages of Waterfall Model.
19 What are boundaries?
20 Write down four phases in Spiral Model.
21 Write down any four disadvantages of Spiral Model.
22 What is Environment?
23 Write down any four Disadvantages of Waterfall Model.
24 What is RAD model?
25 What is DSS?
26 Write down any four Advantages of Prototype model.
27 When Spiral Model should be followed?
28 Write down any four disadvantages of Prototype model.
29 Write down any four Advantages of Spiral Model.
30 What is Expert System?

Q. No.3) **Write short notes on any two of the following**

1. Explain System concepts.
2. Explain Deterministic system and Probabilistic system.
3. Explain Open system and Closed system.
4. Explain Waterfall Model of SDLC.
5. Explain V-shape model.
6. Explain RAD model.
7. Explain different stages of the Software Development Life Cycle.
8. Explain Characteristics of software.
9. Explain Prototyping Model in detail.
10. Explain role of system analyst in software development.

Q. No.4) **Answer any Two of the following**

1. What is System? Explain different elements of system
2. Explain Spiral Model in detail.
3. Explain skill required in system analyst.
4. What is Normalization? Explain up to 3NF.
5. Explain Software risk management in detail.
6. Explain qualities of software.
7. Explain questionnaires in detail.
8. Explain Waterfall model in detail.
9. What is Decision Tree? Explain with example.
10. Explain Record reviews in detail.

Q. No.5) **Answer any one of the following**

1. Explain interpersonal skills in system analyst.
2. What is Decision table? Explain its types with example
3. Explain any eight qualities of software.
4. Explain fact finding techniques.
5. Explain any four characteristics of software.