

XI PUBLIC EXPECTED QUESTIONS LIST

SUBJECT: COMPUTER SCIENCE

CHAPTER – 1

INTRODUCTION TO COMPUTERS

2 MARKS & 3 MARKS

1. What is a computer?
2. Distinguish between data and information.
3. What are the components of a CPU?
4. What is the function of an ALU?
5. What is the function of memory?
6. Differentiate Input and output unit.
7. Distinguish Primary and Secondary memory.
8. Write the applications of computer.
9. What is an input device? Give two examples.
10. Name any three output devices.
11. Write short note on impact printer
12. Write the characteristics of sixth generation.
13. Write the significant features of monitor.

CHAPTER – 2

NUMBER SYSTEMS

2 MARKS & 3 MARKS

14. What is data?
15. Write the 1's complement procedure.
16. Convert $(46)_{10}$ into Binary number
17. We cannot find 1's complement for $(28)_{10}$. State reason.
18. List the encoding systems for characters in memory.
19. What is radix of a number system? Give example
20. Write note on binary number system.
21. Convert $(150)_{10}$ into Binary, then convert that Binary number to Octal
22. Write short note on ASCII
23. Add a) $-22_{10}+15_{10}$ b) $20_{10}+25_{10}$

PART – II

BOOLEAN ALGEBRA

2 MARKS & 3 MARKS

24. What is Boolean algebra?
25. Write a short note on NAND Gate.
26. Draw the truth table for XOR gate.
27. Write the associative laws?
28. What are derived gates?
29. Write the truth table of fundamental gates.
30. Write a short note on XNOR gate.
31. Reason out why the NAND and NOR are called universal gates?
32. Give the truth table of XOR gate.
33. Write the De Morgan's law.

CHAPTER – 3
COMPUTER ORGANIZATION
2 MARKS & 3 MARKS

34. What are the parameters which influence the characteristics of a microprocessor?
35. What is an instruction?
36. What is a program counter?
37. What is HDMI?
38. Which source is used to erase the content of a EPROM?
39. Differentiate Computer Organization from Computer Architecture.
40. Classify the microprocessor based on the size of the data.
41. Differentiate PROM and EPROM.
42. Write down the interfaces and ports available in a computer.
43. Differentiate CD and DVD
44. How will you differentiate a flash memory and an EEPROM?

CHAPTER – 4
THEORETICAL CONCEPTS OF OPERATING SYSTEM
2 MARKS & 3 MARKS

45. List out any two uses of Operating System?
46. What is multi-user Operating system?
47. What are the security management features available in Operating System ?
48. What is multi-processing?
49. What are the different Operating Systems used in computer?
50. What are the advantages and disadvantages of Time-sharing features?
51. List out the key features of Operating system
52. Write a note on Multiprocessing

CHAPTER – 5
WORKING WITH TYPICAL OPERATING SYSTEM
2 MARKS & 3 MARKS

53. What is known as Multitasking?
54. What are called standard icons?
55. Differentiate Files and Folders.
56. Differentiate Save and Save as option.
57. How will you Rename a File?
58. What are the functions of Windows Operating system?
59. Write a note on Recycle bin.
60. Write a note on the elements of a window.
61. Write the two ways to create a new folder.
62. Differentiate copy and move

CHAPTER – 6
SPECIFICATION AND ABSTRACTION
2 MARKS & 3 MARKS

63. Define an algorithm.
64. Distinguish between an algorithm and a process.

65. Initially, farmer, goat, grass, wolf = L, L, L, L and the farmer crosses the river with goat. Model the action with an assignment statement.
66. Specify a function to find the minimum of two numbers.
67. If $\sqrt{2} = 1.414$, and the `square_root()` function returns -1.414, does it violate the following specification?
`square_root(x)`
inputs: x is a real number, $x \geq 0$
outputs: y is a real number such that $y^2 = x$
68. When do you say that a problem is algorithmic in nature?
69. What is the format of the specification of an algorithm?
70. What is abstraction?
71. How is state represented in algorithms?
72. What is the form and meaning of assignment statement?
73. What is the difference between assignment operator and equality operator?

CHAPTER – 7
COMPOSITION AND DECOMPOSITION
2 MARKS & 3 MARKS

74. Distinguish between a condition and a statement.
75. Draw a flowchart for conditional statement.
76. Both conditional statement and iterative statement have a condition and a statement. How do they differ?
77. What is the difference between an algorithm and a program?
78. Why is function an abstraction?
79. How do we refine a statement?
80. What is case analysis?
81. Draw a flowchart for -3case analysis using alternative statements.
82. Define a function to double a number in two different ways: (1) $n + n$, (2) $2 \times n$

CHAPTER – 8
ITERATION AND RECURSION
2 MARKS & 3 MARKS

83. What is an invariant?
84. Does testing the loop condition affect the loop invariant? Why?
85. What is the relationship between loop invariant, loop condition and the input-output recursively?
86. What is recursive problem solving?
87. Define factorial of a natural number recursively.

CHAPTER – 9
C++
2 MARKS & 3 MARKS

88. What are keywords? Can keywords be used as identifiers?
89. Describe the differences between keywords and identifiers?
90. Is C++ case sensitive? What is meant by the term “case sensitive”?
91. Differentiate “=” and “==”.
92. Why is main function special?

- 93. Write a short note const keyword with an example.
- 94. What is the use of setw() format manipulator?
- 95. Why is char often treated as integer data type?
- 96. What is a reference variable? What is its use?
- 97. What is the difference between 56L and 56?
- 98. What are arithmetic operators in C++? Differentiate unary and binary arithmetic operators. Give example for each of them.
- 99. How relational operators and logical operators related to one another?

CHAPTER – 10
FLOW OF CONTROL
2 MARKS & 3 MARKS

- 100. What is a null statement and compound statement?
- 101. What is selection statement? Write it's types?
- 102. Compare if-else and ?: (Ternary) Operator.
- 103. Write the syntax and purpose of switch statement.

CHAPTER – 11
FUNCTIONS
2 MARKS & 3 MARKS

- 104. Define Functions.
- 105. Write about strlen() function.
- 106. What is the importance of void data type?
- 107. What is Parameter and list its types?
- 108. Write a note on Local Scope.
- 109. What are Built-in functions?
- 110. What is the difference between isupper() and toupper() functions ?
- 111. Write short note on pow() function in C++.
- 112. What is the information the prototype provides to the compiler?
- 113. What are default arguments? Give example.

CHAPTER – 12
ARRAYS AND STRUCTURES
2 MARKS & 3 MARKS

- 114. What is Traversal in an Array?
- 115. What is Strings?
- 116. What is the syntax to declare two – dimensional array.
- 117. Define structure .What is its use?
- 118. Define an Array? What are the types?
- 119. Write a note on Array of strings.
- 120. How to access members of a structure? Give example.
- 121. What is called anonymous structure .Give an example

CHAPTER – 13
INTRODUCTION TO OBJECT ORIENTED PROGRAMMING TECHNIQUES
2 MARKS & 3 MARKS

- 122. How is modular programming different from procedural programming paradigm?

- 123. Differentiate classes and objects.
- 124. How encapsulation and abstraction is are interrelated?
- 125. Write the disadvantages of OOP.
- 126. What is paradigm? Mention the different types of paradigm.
- 127. Write a note on the features of procedural programming.
- 128. List some of the features of modular programming
- 129. What do you mean by modularization and software reuse?
- 130. Define information hiding.

CHAPTER – 14
CLASSES AND ITS OBJECTS
2 MARKS & 3 MARKS

- 131. What are called members?
- 132. Differentiate structure and class though both are user defined data type.
- 133. What is the difference between the class and object in terms of oop?
- 134. Why it is considered as a good practice to define a constructor though compiler can automatically generate a constructor?
- 135. Write down the importance of destructor.
- 136. Write with example how will you dynamically initialize objects?
- 137. What are advantages of declaring constructors and destructor under public accessibility?

CHAPTER – 15
POLYMORPHISM
2 MARKS & 3 MARKS

- 138. What is function overloading?
- 139. List the operators that cannot be overloaded.
- 140. Does the return type of a function help in overloading a function?
- 141. What is the use of overloading a function?
- 142. What are the rules for function overloading?
- 143. How does a compiler decide as to which function should be invoked when there are many functions?
Give an example.
- 144. What is operator overloading? Give some example of operators which can be overloaded.
- 145. Discuss the benefit of constructor overloading?

CHAPTER – 16
INHERITANCE
2 MARKS & 3 MARKS

- 146. What is a base class?
- 147. Why derived class is called power packed class?
- 148. In what multilevel and multiple inheritance differ though both contains many base class?
- 149. What is the difference between public and private visibility mode?
- 150. What are the points to be noted while deriving a new class?
- 151. What is difference between the members present in the private visibility mode and the members present in the public visibility mode
- 152. What is the difference between polymorphism and inheritance though are used for reusability of code?

153. What do you mean by overriding?

154. Write some facts about the execution of constructors and destructors in inheritance

**CHAPTER – 17
COMPUTER ETHICS AND CYBER SECURITY
2 MARKS & 3 MARKS**

155. What is harvesting?

156. What are Warez?

157. Write two types of cyber attacks.

158. What is a Cookie?

159. What is the role of firewalls?

160. Explain about proxy server

161. What are the guidelines to be followed by any computer user?

162. What are ethical issues? Name some.

**CHAPTER – 18
TAMIL COMPUTING
2 MARKS & 3 MARKS**

163. List of the search engines supporting Tamil.

164. What is the keyboard layouts used in Android?

165. Write a short note about Tamil Programming Language

166. What TSCII?

**CHAPTER – 1
INTRODUCTION TO COMPUTERS
5 Marks**

1. Explain the basic components of a computer with a neat diagram?

2. Explain the Various Input Devices?

3. Explain the following

a. Inkjet Printer

b. Multimedia projector

c. Bar code / QR code Reader

**CHAPTER – 2
NUMBER SYSTEMS
5 Marks**

4. Find 1's Complement and 2's Complement for the following Decimal number

a) -98 b) -135

5. Do the following Arithmetic: a) Add $1101010_2 + 101101_2$ b) Subtract $1101011_2 - 111010_2$

**PART – II
BOOLEAN ALGEBRA 5 Marks**

6. Explain the fundamental gates with expression and truth table.

7. How AND and OR can be realized using NAND and NOR gate.

8. Explain the Derived gates with expression and truth table.

**CHAPTER – 3
COMPUTER ORGANIZATION
5 Marks**

9. Explain the Characteristics of Microprocessor?

10. What are the different types of ROM?
11. Explain the Secondary Storage Devices?
12. Explain the Ports and Interfaces?

CHAPTER – 4
THEORETICAL CONCEPTS OF OPERATING SYSTEM

5 Marks

13. Explain the concept of a Distributed Operating System along with its advantages.
14. List out the points to be noted while creating a user interface for an Operating system.

CHAPTER – 5
WORKING WITH TYPICAL OPERATING SYSTEM

5 Marks

15. Describe the Various Versions of Windows?
16. Explain the different ways of finding a file or Folder
17. Write the procedure to create shortcut in Windows OS
18. What are the Elements of a Window? Explain it briefly?
19. What are the methods are there to create a New Folder?
20. What are the methods to rename the Files or Folders?
21. Explain how to Copying Files and Folders to removable disk?

CHAPTER – 6
SPECIFICATION AND ABSTRACTION

5 Marks

22. Write the specification of an algorithm hypotenuse whose inputs are the lengths of the two shorter sides of a right angled triangle, and the output is the length of the third side.
23. Exchange the contents: Given two glasses marked A and B. Glass A is full of apple drink and glass B is full of grape drink. For exchanging the contents of glasses A and B, represent the state by suitable variables, and write the specification of the algorithm.
24. Suppose you want to solve the quadratic equation $ax^2 + bx + c = 0$ by an algorithm.
quadratic_solve (a, b, c)
-- inputs : ?
-- outputs: ?
You intend to use the formula and you are prepared to handle only real number roots. Write a suitable specification.

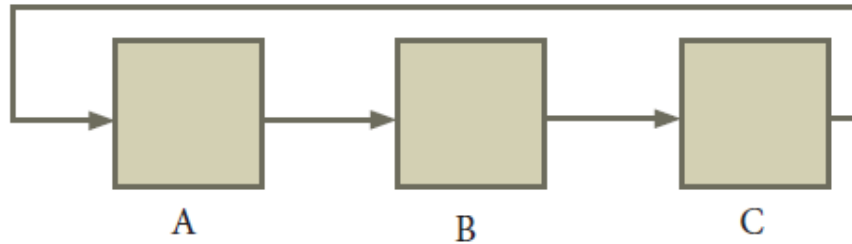
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

25. What are the Algorithm Design Techniques? Explain it?

CHAPTER – 7
COMPOSITION AND DECOMPOSITION

5 Marks

26. Exchange the contents: Given two glasses marked A and B. Glass A is full of apple drink and glass B is full of grape drink. Write the specification for exchanging the contents of glasses A and B, and write a sequence of assignments to satisfy the specification.
27. Circulate the contents: Write the specification and construct an algorithm to circulate the contents of the variables A, B and C as shown below: The arrows indicate that B gets the value of A, C gets the value of B and A gets the value of C.



28. Decanting problem. You are given three bottles of capacities 5 ,8, and 3 litres. The 8L bottle is filled with oil, while the other two are empty. Divide the oil in 8L bottle into two equal quantities. Represent the state of the process by appropriate variables. What are the initial and final states of the process? Model the decanting of oil from one bottle to another by assignment. Write a sequence of assignments to achieve the final state.
29. Trace the step-by-step execution of the algorithm for factorial(4).
- ```
factorial(n)
-- inputs : n is an integer , n ≥ 0
-- outputs : f = n!
f, i := 1 ,1
while i ≤ n
 f, i := f × i, i+1
```

### CHAPTER – 9

#### C++

**5 Marks**

30. What are the different types of Errors in Dev C++?

### CHAPTER – 10

#### FLOW OF CONTROL

**5 Marks**

31. Explain Switch Statement with an example?
32. Describe the Key Differences between if – else and switch?
33. What are the parts of the Loop in the Iteration Statement?
34. Explain the For Loop with Syntax and Example?
35. Explain the While Loop with Syntax and Example?
36. Explain the Do – While Loop with Syntax and Example?
37. Write a C++ Program to find the LCM and GCD of two numbers?
38. Write a program to find sum of the series

$$S = 1 + x + x^2 + \dots + x^n$$

### CHAPTER – 11

#### FUNCTIONS

**5 Marks**

39. What is Recursion? Write a program to find GCD using recursion.
40. What are the different forms of function return? Explain with example.
41. Define Scope? Explain the various types of scopes in C++ language?
42. Write a program to accept any integer number and reverse it.
43. Describe the Inline Function with Syntax, Advantages and program?
44. Explain the Call by Reference method with Program?

### CHAPTER – 12

#### ARRAYS AND STRUCTURES

**5 Marks**



45. Write a C++ program to find the difference between two matrixes?

**CHAPTER – 13  
INTRODUCTION TO OBJECT ORIENTED PROGRAMMING TECHNIQUES  
5 Marks**

46. Write the differences between Object Oriented Programming and procedural programming  
47. What are the advantages of OOPs?  
48. Write a note on the basic concepts that supports OOPs?

**CHAPTER – 14  
CLASSES AND ITS OBJECTS  
5 Marks**

49. Explain the Characteristics of Constructors?  
50. Explain the Characteristics of Destructors?

**CHAPTER – 15  
POLYMORPHISM  
5 Marks**

51. What are the Rules of Operator Overloading?  
52. What is Function overloading? Explain with an example?

**CHAPTER – 16  
INHERITANCE  
5 Marks**

53. Define Inheritance. Explain the different types of inheritance?  
54. Explain the different visibility mode through pictorial representation

**CHAPTER – 17  
COMPUTER ETHICS AND CYBER SECURITY  
5 Marks**

55. What are the various crimes happening using computer?  
56. What is piracy? Mention the types of piracy? How can it be prevented?  
57. What are the general guidelines of Computer Ethics?