

COMPUTER SCIENCE

QUESTION MATERIAL

BOOK BACK & PUBLIC

XI - STANDARD

PREPARED BY.,

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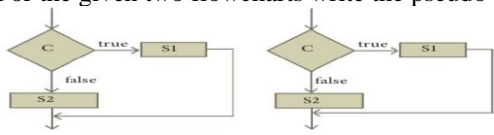
CHAPTER 1 TO 18 [2, 3 & 5] MARK BOOK BACK & PUBLIC QUESTIONS

	CHAPTER – 1 INTRODUCTION TO COMPUTERS
1.	What is a computer? [AUG-2022]
2.	Distinguish between data and information.
3.	What are the components of a CPU? [S-2020]
4.	What is the function of an ALU? [M-2020, J-2024]
5.	Write the functions of control unit. [M-2023]
6.	What is the function of memory?
7.	Differentiate Input and output unit.
8.	Distinguish Primary and Secondary memory. [M-2024]
1.	Write short note on Impact printer [M-2019]
	CHAPTER – 2 (PART – 1) NUMBER SYSTEMS
1.	What is data?
2.	Write the 1's complement procedure.
3.	Convert $(46)_{10}$ into equivalent binary number. [AUG-2022]
4.	We cannot find 1's complement for $(28)_{10}$. State reason.
5.	List the encoding systems for characters in memory. [J-2023]
1.	Convert $(1324)_8$ into its equivalent decimal number. [M-2024]
2.	Convert $(44)_{10}$ into Binary number [M-2022]
3.	Write a short note on Hexadecimal number system [AUG-2022]
4.	Perform binary addition for the following: $15_{10} + 20_{10}$ [M-2023]
5.	11.011_2 Binary to decimal equivalent [M-2020]
	CHAPTER – 2 (PART – 2) BOOLEAN ALGEBRA
1.	What is Boolean Algebra?
2.	Write a short note on NAND Gate.
3.	Draw the truth table for XOR gate.
4.	Write the associative laws? [J-2024]
5.	What are derived gates? [J-2019]
	CHAPTER – 3 COMPUTER ORGANIZATION
1.	What are the parameters which influence the characteristics of a microprocessor?
2.	What is an instruction? [M-2019]
3.	What is a program counter? [M-2019, J-2023]
4.	What is HDMI? [S-2020, J-2024]
5.	Which source is used to erase the content of an EPROM?
1.	What is an instruction set? (AUG-2022)
	CHAPTER – 4 THEORETICAL CONCEPTS OF OPERATING SYSTEM
1.	List out any two uses of Operating System?
2.	What is the multi-user Operating system? [M-2019, M-2024]
3.	What is a GUI? [J-2019, M-2023]
4.	What are the security management features (levels) available in Operating System? [S-2020]
5.	What is multi-processing?
6.	What are the different Operating Systems used in computer?
1.	Name some popular operating system used in personal computer and mobile devices. (M-2022)
2.	Define software and mention its types (AUG-2022)
	CHAPTER – 5 WORKING WITH WINDOWS OPERATING SYSTEM
1.	What is known as Multitasking? [J-2024]
2.	What are called standard icons? [M-2022, J-2023]
3.	Differentiate Files and Folders. [AUG-2022]
4.	Differentiate Save and save As option.
5.	How will you Rename a File?
	CHAPTER – 6 SPECIFICATION AND ABSTRACTION
1.	Define an algorithm. [M-2022, M-2024]
2.	Distinguish between an algorithm and a process.
3.	Initially, farmer, goat, grass, wolf = L, L, L, L and the farmer crosses the river with goat.
4.	Specify a function to find the minimum of two numbers.
5.	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 $y^2 = x$
1.	What is abstraction? (J-2023)
2.	What is difference between algorithm and a program? (AUG-2022)

CHAPTER – 7 COMPOSITION AND DECOMPOSITION													
1.	Distinguish between a condition and a statement.												
2.	Draw a flowchart for conditional statement.												
3.	Both conditional statement and iterative statement have a condition and statement. How do they differ?												
4.	What is the difference between an algorithm and a program? [AUG-2022]												
5.	Why is function an abstraction?												
6.	How do we refine a statement?												
CHAPTER – 8 ITERATION AND RECURSION													
1.	What is an invariant? [J-2023]												
2.	Define a loop invariant. [M-2023]												
3.	Does testing the loop condition affect the loop invariant? Why?												
4.	What is the relationship between loop invariant, loop condition and the Input output recursively												
5.	What is recursive problem solving?												
6.	Define factorial of a natural number recursively.												
1.	What is recursion? [M-2020]												
2.	What is iteration? [S-2020]												
CHAPTER – 9 (PART – 1) INTRODUCTION TO C++													
1.	What is meant by a token? Name the token available in C++? [M-2023]												
2.	What are keywords? Can keywords be used as identifiers? [J-2019]												
3.	The following constants are of which type? (i) 39 (ii) 032 (iii) 0XCAFE (iv) 04.1 4												
4.	Write the following real constants into the exponent form: (a) 23.197 (b) 7.214 (c) 0.00005 (d) 0.319												
5.	Assume n=10; what will be result of n++ and -- n; ?												
6.	Match the following												
	<table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>(a) Modulus</td> <td>(1) Tokens</td> <td>(b) Separators</td> <td>(2) Remainder of a division</td> </tr> <tr> <td>(c) Stream extraction</td> <td>(3) Punctuators</td> <td>(d) Lexical Units</td> <td>(4) get from</td> </tr> </tbody> </table>	A	B	A	B	(a) Modulus	(1) Tokens	(b) Separators	(2) Remainder of a division	(c) Stream extraction	(3) Punctuators	(d) Lexical Units	(4) get from
A	B	A	B										
(a) Modulus	(1) Tokens	(b) Separators	(2) Remainder of a division										
(c) Stream extraction	(3) Punctuators	(d) Lexical Units	(4) get from										
1.	Write about Input / Output operators in C++ [AUG-2022]												
2.	Initially j is 20 and p is 4 then, What will be the value of p=p*++j? [M-2019]												
CHAPTER – 9 (PART – 2) DATA TYPES, VARIABLES AND EXPRESSIONS													
1.	Write a short note const keyword with an example. [M-2024]												
2.	What is the use of setw () format manipulator? [J-2024]												
3.	Why is char often treated as integer data type?												
4.	What is a reference variable? What is its use?												
5.	Consider the following C++ statement. Are they equivalent? Char ch = 67; char ch = 'C';												
6.	What is the difference between 56L and 56?												
7.	Determine which of the following are valid constant? And specify their type. (i) 0.5 (ii) 'Name' (iii) '\t' (iv) 27,822												
8.	Suppose x and y are two double type variable that you want add as integer variable. Construct a C++ statement to do the above.												
9.	What will be the result of following if num=6 initially. (a) cout << num; (b) cout << (num==5)												
10.	Which of the following two statements are valid? Why? Also write their result. Int a; (i) a = 3,014; (ii) a=(3,014);												
1.	Write the output for the following: [M-2023] #include<iostream> using namespace std; int main () { Double var1=87.25255; cout<<(float)var1<<endl; cout<<(int)var1<<endl; }												
2.	What is mean by type conversion? [S-2020]												
CHAPTER – 10 FLOW OF CONTROL													
1.	What is a null statement and compound statement? [M-2022 3M]												
2.	What is selection statement? Write its types.												
3.	Correct the following code segment: if (x=1) p= 100; else p = 10;												
4.	What will be the <u>output</u> of the following code: int year; cin >> year; if (year % 100 == 0) if (year % 400 == 0) cout << "Leap"; else cout << "Not Leap year"; (i) 2000 (ii) 2003 (iii) 2010												
5.	What is the output of the following code? for (int i=2; i<=10; i+=2) cout << i;												
6.	Write a for loop that displays the number from 21 to 30.												
7.	Write a while loop that displays numbers 2, 4, 6, 8.....20. [J-2024]												
8.	Compare an if and a ? : operator												

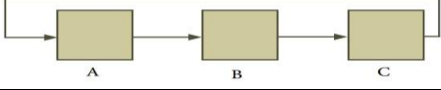
1.	Write a while loop that displays numbers 5, 10, 15,50. [M-2019]
2.	Write the syntax and example of if statement [M-2020]
3.	What are the important control flow statement [J-2019]
4.	for (int m=1;m<=9,M+=2) cout<<m; [S-2020] 1)How many times the loop will be executed? 2) Write the output of the above snippet.
5.	Convert the following if..else statement into conditional statement. [J-2023] if (marks >= 60) Grade = 'A'; else Grade = 'B';
6.	Write a note on break and continue statement in C++? [M-2020]
7.	Write the output of the following program. [M-2024] #include<iostream>using namespace std; int main() { int i; for(i=0;i<8;i++) cout<<i<<endl; return 0; }
CHAPTER – 11 FUNCTIONS	
1.	Define Functions.
2.	Write about strlen () function. [S-2020, J-2023, J-2024]
3.	What are importance of void data type? [M-2019, M-2020, M-2022, M-2024]
4.	What is Parameter and list its types? [J-2019]
5.	Write a note on Local Scope.
CHAPTER – 12 ARRAYS AND STRUCTURES	
1.	What is Traversal in an Array?
2.	What is Strings?
3.	What is the syntax to declare two – dimensional array. [M-2019, M-2022, J-2024]
4.	Define structure .What is its use?
5.	What is the error in the following structure definition? struct employee{ inteno;charename[20];char dept;} Employee e1,e2;
1.	How many elements are there in the following array declaration and also write its memory allocation. Char ch[15]; [J-2019]
CHAPTER – 13 OBJECT ORIENTED PROGRAMMING TECHNIQUES	
1.	How is modular programming different from procedural Programming paradigm?
2.	Differentiate classes and objects.
3.	What is polymorphism? [J-2019, M-2020, M-2023]
4.	How encapsulation and abstraction is are interrelated?
5.	Write the disadvantages of OOP. [M-2019]
1.	What is a class in C++? [S-2020, J-2023]
CHAPTER – 14 CLASSES AND OBJECTS	
1.	What are called members? [M-2019]
2.	Differentiate structure and class though both are user defined data type.
3.	What is the difference between the class and object in terms of OOP?
4.	Why it is considered as a good practice to define a constructor though compiler can automatically generate a constructor?
5.	Write down the importance of destructor. [J-2019]
CHAPTER – 15 POLYMORPHISM	
1.	What is function overloading? [M-2022]
2.	List the operators that cannot be overloaded. [J-2019, J-2024]
3.	Class add {int x; public: add (int)}; Write an outline definition for the constructor.
4.	Does the return type of a function help in overloading a function?
5.	What is the use of overloading a function?
1.	What is polymorphism? [M-2019, M-2020]
CHAPTER – 16 INHERITANCE	
1.	What is inheritance? [M-2023]
2.	What is a base class?
3.	Why derived class is called power packed class? [M-2022]
4.	In what multilevel and multiple inheritance differ though both contains many base class?
5.	What is the difference between public and private visibility mode?
CHAPTER – 17 COMPUTER ETHICS AND CYBER SECURITY	
1.	What is harvesting? [M-2019, AUG-2022]
2.	What are Warez? [J-2023, M-2024]
3.	Write a short note on cracking.
4.	Write two types of cyber-attacks.
5.	What is a Cookie? [S-2020]
CHAPTER – 18 TAMIL COMPUTING	
1.	List of the search engines supporting Tamil. [M-2020, M-2024]
2.	What are the keyboard layouts used in Android?

3.	Write a short note about Tamil Programming Language.
4.	What TSCII? [M-2020, M-2022]
5.	Write a short note on Tamil Virtual Academy.
CHAPTER 1 TO 18 THREE MARK BOOK BACK & PUBLIC QUESTION WITH ANSWERS	
CHAPTER – 1 INTRODUCTION TO COMPUTERS	
1.	What are the characteristics of a computer? [M-2023]
2.	Write the applications of computer.
3.	What is an input device? Give two examples.
4.	Name any three output devices.
5.	Differentiate optical and Laser mouse. [M-2019]
6.	Write short note on impact printer
7.	Write the characteristics of sixth generation. [M-2022]
8.	Write the significant features of monitor. (OR) Characteristics of monitor [M-2024]
1.	Differentiate – Cold and Warm booting. [J-2023]
CHAPTER – 2 (PART – 1) NUMBER SYSTEMS	
1.	What is radix of a number system? Give example. [AUG-2022]
2.	Write note on binary number system. [J-2023]
3.	Convert $(150)_{10}$ into Binary, then convert that Binary number to Octal.
4.	Write short note on ISCII.
5.	Add a) $-22_{10}+15_{10}$ b) $20_{10}+25_{10}$ [J-2024]
1.	Convert 340_{10} to its equivalent Binary, Octal and Hexadecimal [J-2019]
2.	A) State whether the following numbers are valid or not. If invalid write reason. 1) $(796)_8$ 2) $(7GE)_{16}$ 3) $(1110)_2$ [S-2020] B) Write the number system for the following numbers. 1) $(926)_{10}$ 2) $(ABC)_{16}$ 3) $(450)_8$
3.	Convert the following into octal number into binary number. i) 6137 ii) 245 iii) 472 [J-2023]
CHAPTER – 2 (PART – 2) BOOLEAN ALGEBRA	
1.	Write the truth table of fundamental gates. [M-2020]
2.	Write a short note on XNOR gate.
3.	Reason out why the NAND and NOR are called universal gates?
4.	Give the truth table of XOR gate. [M-2019, M-2024]
5.	Write the De Morgan's law. [J-2024]
CHAPTER – 3 COMPUTER ORGANIZATION	
1.	Differentiate Computer Organization from Computer Architecture.
2.	Classify the microprocessor based on the size of the data. [M-2022, J-2024]
3.	Write down the classifications of microprocessors based on the instruction set. [M-2023]
4.	Differentiate PROM and EPROM.
5.	Write down the interfaces and ports available in a computer. [S-2020]
6.	Differentiate CD and DVD. [J-2019, M-2020, M-2024]
7.	How will you differentiate a flash memory and an EEPROM?
1.	Explain the types of RAM (AUG-2022)
CHAPTER – 4 THEORETICAL CONCEPTS OF OPERATING SYSTEM	
1.	What are the advantages and disadvantages of Time-sharing features? [M-2023]
2.	List out the key features of Operating system [J-2023]
3.	Write a note on Multi processing.
1.	Write a note following process management system (a) FIFO (b) SJF [S-2020]
CHAPTER – 5 WORKING WITH WINDOWS OPERATING SYSTEM	
1.	What are the functions of Windows Operating System? [AUG-2022]
2.	Write a note on Recycle bin. [M-2020, J-2023]
3.	Write a note on the elements of a window. [J-2024]
4.	Write the two ways to create a new folder. [M-2023]
5.	Differentiate copy and move
1.	Write the procedure to create a file in word pad [AUG-2022]
CHAPTER – 6 SPECIFICATION AND ABSTRACTION	
1.	When do you say that a problem is algorithmic in nature?
2.	What is the format of the specification of an algorithm?
3.	What is abstraction?
4.	How is state represented in algorithms? [M-2024]
5.	What is the form and meaning of assignment statement?
6.	What is the difference between assignment operator and equality operator?

1.	What is decomposition [M-2020]
CHAPTER – 7 COMPOSITION AND DECOMPOSITION	
1.	For the given two flowcharts write the pseudo code. 
2.	If C is false in line 2, trace the control flow in this algorithm. 1 S1 2 -- C is false 3 if C 4 S2 5 else 6 S3
3.	What is case analysis? [M-2022]
4.	Draw a flowchart for -3case analysis using alternative statements.
5.	Define a function to double a number in two different ways: (1) $n + n$, (2) $2 \times n$
1.	What is a flow chart? Write the disadvantages of flow chart [S-2020]
2.	Define flow chart, pseudo code and a programming language [J-2019]
CHAPTER – 8 ITERATION AND RECURSION	
1.	There are 7 tumblers on a table, all standing upside down. You are allowed to turn any 2 tumblers simultaneously in one move. Is it possible to reach a situation when all the tumblers are right side up? (Hint: The parity of the number of upside down tumblers is invariant.)
2.	A knockout tournament is a series of games. Two players compete in each game; the loser is knocked out (i.e. does not play any more), the winner carries on. The winner of the tournament is the player that is left after all other players have been knocked out. Suppose there are 1234 players in a tournament. How many games are played before the tournament winner is decided?
3.	King Vikramaditya has two magic swords. With one, he can cut off 19 heads of a dragon, but after that the dragon grows 13 heads. With the other sword, he can cut off 7 heads, but 22 new heads grow. If all heads are cut off, the dragon dies. If the dragon has originally 1000 heads, can it ever die? (Hint: The number of heads mod 3 is invariant.)
1.	What are the values of variable m and n after in assignment in line (1) and line (3)? [M-2019] 1) $m, n := 4, 10$ 2) $-m, n = ?, ?$ 3) $m, n := m+5, n-2$ 4) $-m, n = ?, ?$
CHAPTER – 9 (PART – 1) INTRODUCTION TO C++	
1.	Describe the differences between keywords and identifiers? (or) Write a short note on [M-2020]
2.	Is C++ case sensitive? What is meant by the term “case sensitive”?
3.	Differentiate “=” and “==”.
4.	What is the use of a header file?
5.	Why is main function special? [J-2024]
1.	Write a note on logical operators in C++ (S-2020) (AUG-2022)
2.	What are keywords? Can keywords be used as identifiers? [M-2022]
CHAPTER – 9 (PART – 2) DATA TYPES, VARIABLES AND EXPRESSIONS	
1.	What are arithmetic operators in C++? Differentiate unary and binary arithmetic operators.
2.	How relational operators and logical operators related to one another?
3.	Evaluate the following C++ expressions where x, y, z are integers and m, n are floating point numbers. The value of $x = 5$, $y = 4$ and $m = 2.5$; (i) $n = x + y / x$; (ii) $z = m * x + y$; (iii) $z = (x++) * m + x$;
1.	Types of conversion? Write short note on implicit type conversion [M-2019]
CHAPTER – 10 FLOW OF CONTROL	
1.	Convert the following if-else to a single conditional statement: if $(x \geq 10)$ $a = m + 5$; else $a = m$;
2.	Rewrite the following code so that it is functional: $v = 5$; do; { $total += v$; cout << total; while $v \leq 10$
3.	Write a C++ program to print multiplication table of a given number. [AUG-2022, J-2024]
4.	Write the syntax and purpose of switch statement. [M-2019, M-2022, J-2024]
5.	Write a short program to print following series: a) 1 4 7 10..... 40
1.	Write a c++ program to sum the numbers from 1 to 10 using ‘for’ loop. [M-2022]
2.	Write a short program to print following series: 1 3 5 7...75 [J-2019]
3.	Write a C++ program to display numbers from 1 to 10. Except 5 using ‘for’ and ‘continue’ Statement. [M-2023]
4.	Differentiate – break and continue statement [J-2023]
5.	What is null statement and compound statement? [M-2022]
6.	Write a C++ program to display number from 5 to 1 using do-while loop [M-2024]
CHAPTER – 11 FUNCTIONS	
1.	What is Built-in functions?
2.	What is the difference between isuppr () and toupper () functions? [J-2019, M-2020, M-2024]
3.	Write about strcmp () function. [M-2020, M-2023]
4.	Write short note on pow () function in C++. [J-2024]
5.	What are the information the prototype provides to the compiler?

6.	What is default arguments? Give example.
1.	Write note on User-Defined functions [M-2022]
2.	Write a note on local scope [AUG-2022]
CHAPTER - 12 ARRAYS AND STRUCTURES	
1.	Define an Array? What are the types? [M-2020, M-2024]
2.	With note an Array of strings. [AUG-2022]
3.	The following code sums up the total of all students name starting with 'S' and display it. Fill in the blanks with required statements. <code>struct student { int exam no, lang, eng, phy, che, mat, csc, total; char name[15]; }; int main() { student s[20]; for(int i=0; i<20; i++) { //accept student details } for(int i=0; i<20; i++) { //check for name starts with letter "S" // display the detail of the checked name } return 0; }</code>
4.	How to access members of a structure? Give example. [M-2020, J-2024]
5.	What is called anonymous structure .Give an example? [J-2023]
1.	What is called nested structure? Give example. [M-2019]
CHAPTER - 13 OBJECT ORIENTED PROGRAMMING TECHNIQUES	
1.	What is paradigm? Mention the different types of paradigm.
2.	Write a note on the features of procedural programming. [J-2023]
3.	List some of the features of modular programming. [J-2019, S-2020]
4.	What do you mean by modularization and software reuse?
5.	Define information hiding.
1.	Define Encapsulation [M-2019]
CHAPTER - 14 CLASSES AND OBJECTS	
1.	Rewrite the following program after removing the syntax errors if any and underline the errors: <code>#include<iostream> \$include<stdio.h> class mystud { intstudid =1001; Char name[20]; { } void register () { cin>>stdid;gets(name); } void display () { cout<<studid<<": "<<name<<endl; } } int main() { mystud MS; register.MS(); MS.display(); } public mystud()</code>
2.	Write with example how will you dynamically initialize objects?
3.	What are advantages of declaring constructors and destructor under public accessibility?
4.	Given the following C++ code, answer the questions (i) & (ii). <code>class TestMeOut { public: ~TestMeOut() //Function 1 {cout<<"Leaving the examination hall"<<endl; } TestMeOut() //Function 2 {cout<<"Appearing for examination"<<endl; } void MyWork() //Function 3 {cout<<"Attempting Questions//<<endl; } };</code> (i) In Object Oriented Programming, what is Function 1 referred as and when does it get invoked / called? (ii) In Object Oriented Programming, what is Function 2 referred as and when does it get invoked / called?
1.	What are the ways to define member function of a class? Give example. [J-2019]
2.	Write a short notes on class access specifier of C++. [M-2023]
3.	Read the following snippet answer the questions given below. [J-2019] <code>class student { int m,n; public void add(); Float calc(); } x1,x2;</code> i) identify the member of the class? ii) What is size of the objects x1,x2 in memory?
4.	Read the following C++ code and answer the questions given below. [M-2020] <code>#include<iomanip> #include<iostream> using namespace std; class product { int code, quantity; float price; public: void assigndata(); void print(); } int main() { product p1,p2; cout<<"\n Memory allocation for object p1"<<sizeof(p1); cout<<"\n Memory allocation for object p2"<<sizeof(p2); return 0; }</code> 1. What is the name of the class in the above program? 2. What are the data members are the class? 3. What is the memory size of the objects p1,p2?
CHAPTER - 15 POLYMORPHISM	
1.	What are the rules for function overloading? [S-2020]
2.	How does a compiler decide as to which function should be invoked when there are many functions? Give an example.
3.	What is operator overloading? Give some example of operators which can be overloaded.
4.	Discuss the benefits of constructor overloading?
5.	Class sale (int cost, discount ;public: sale(sale &); Write a non-inline definition for constructor specified;
1.	What is operator overloading? Give some example of operators which can not be overloaded. [J-2019]
CHAPTER - 16 INHERITANCE	
1.	What are the points to be noted while deriving a new class? [M-2019, M-2024]
2.	What is difference between the members present in the private visibility mode and the members present in the public visibility mode
3.	What is the difference between polymorphism and inheritance though are used for reusability of code?
4.	What do you mean by overriding? [J-2023]
5.	Write some facts about the execution of constructors and destructors in inheritance.
1.	Write about three visibility mode [M-2020]
2.	Consider the following c ++ code and answer the questions [S-2020]

	<pre>class Personal { int admno,rno; protected: char Name[20]; public: personal(); void pentry(); void Pdisplay(); }; class Marks:private Personal { int M protected: char Grade[5]; public: Marks(); void Mentry(); void Mdisplay(); }; class Result:public Marks { float Total,Agg; char remark[5]; result(); void Rcalculate(); void Rdisplay(); 1 Which type of Inheritance is shown in the program? 2 Specify the visibility mode of base classes. 3.Name the base class(/es) and derived class (/es).</pre>
	CHAPTER – 17 COMPUTER ETHICS AND CYBER SECURITY
1.	What is the role of firewalls?
2.	Write about encryption and decryption. [M-2023]
3.	Explain about proxy server.
4.	What are the guidelines to be followed by any computer user? [S-2020]
5.	What are ethical issues? Name some. [M-2022]
1.	What is meant by computer ethics? [AUG-2022]
	CHAPTER – 18 TAMIL COMPUTING
1.	Write a short note on Tamil virtual Academy. [M-2023]
	CHAPTER 1 TO 18 FIVE MARK BOOK BACK & PUBLIC QUESTION WITH ANSWERS
	CHAPTER – 1 INTRODUCTION TO COMPUTERS
1.	Explain the basic components of a computer with a neat diagram. [M-2019, J-2023, M-2024]
2.	Discuss the various generations of computers. [J-2019, AUG-2022, M-2020, M-2023, J-2024]
3.	Explain the following a. Inkjet Printer b. Multimedia projector c. Bar code / QR code Reader
1.	Explain Data and information [M-2022]
2.	What is an output unit? Explain any three output unit. [M-2024]
	CHAPTER – 2 (PART – 1) NUMBER SYSTEMS
1.	a) Write the procedure to convert fractional Decimal to Binary [M-2023] b) Convert $(98.46)_{10}$ to binary: [S-2020, M-2023]
2.	Find 1's Complement and 2's Complement for the following Decimal number a) -98 b) - 135
3.	a) Add $1101010_2 + 101101_2$ b) Subtract $1101011_2 - 111010_2$ [S-2020, J-2023, J-2024]
1.	Find the 2's complement of $(-46)_{10}$ 2) Convert $(145)_8$ to binary [S-2020]
2.	Explain 1's complement representation with an example [AUG-2022]
3.	Convert the following: (i) $(1920)_{10} = ()_8$ (ii) $(1920)_{10} = ()_2$ (iii) $(8BC)_{16} = ()_2$ (iv) $(6213)_8 = ()_2$ (v) $(255)_{10} = ()_{16}$ [M-2019]
4.	Perform binary addition for the following: i) $(-21)_{10} + (5)_{10}$ ii) $(-12)_{10} + (15)_{10}$ [M-2024]
	CHAPTER - 2 (PART - 2) BOOLEAN ALGEBRA
1.	Explain the fundamental gates with expression and truth table. [J-2024]
2.	How AND and OR can be realized using NAND and NOR gate.
3.	Explain the Derived gates with expression and truth table.
	CHAPTER – 3 COMPUTER ORGANIZATION
1.	Explain the characteristics of a microprocessor. [J-2019, AUG-2022, J-2023]
2.	How the read and write operations are performed by a processor? Explain.
3.	Arrange the memory devices in ascending order based on the access time. [M-2023]
4.	Explain the types of ROM. [M-2022, M-2024, J-2024]
	CHAPTER – 4 THEORETICAL CONCEPTS OF OPERATING SYSTEM
1.	Explain the concept of a Distributed Operating System along with its advantages. [M-2019, M-2024]
2.	List out the points to be noted while creating a user interface for an Operating system. [M-2019, J-2024]
3.	Explain the process management algorithms in Operating System. [M-2020, M-2023]
1.	List out the uses of operating system [M-2020, J-2023]
	CHAPTER – 5 WORKING WITH WINDOWS OPERATING SYSTEM
1.	Explain the versions of Windows Operating System. [M-2022, J-2024]
2.	Explain the different ways of finding a file or Folder:
3.	Write the procedure to create shortcut in Windows OS.
1.	Explain the parts of Windows in windows operating System. [S-2022]
	CHAPTER – 6 SPECIFICATION AND ABSTRACTION
1.	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.
2.	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.
3.	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.
1.	Write the specification of an algorithm for computing the square root of a number [M-2022]
	CHAPTER – 7 COMPOSITION AND DECOMPOSITION
1.	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.
2.	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. 
3.	Decanting problem. You are given three bottles of capacities 5, 8, and 3 liters. 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.
4.	Trace the step-by-step execution of the algorithm for factorial (4). Factorial (n) -- inputs : n is an integer, n ≥ 0 -- outputs : f = n!, i := 1, 1 while I ≤ n f, I := f × I, i+1 [M-2019]
1.	Explain case analysis with an example [AUG-2022]
	CHAPTER – 8 ITERATION AND RECURSION
1.	Assume an 8 × 8 chessboard with the usual colouring. "Recoloring" operation changes the colour of all squares of a row or a column. You can recolor repeatedly. The goal is to attain just one black square. Show that you cannot achieve the goal.
2.	Power can also be defined recursively as $a^n = \begin{cases} 1 & \text{if } n = 0 \\ a \times a^{n-1} & \text{if } n \text{ is odd} \\ a^{n/2} \times a^{n/2} & \text{if } n \text{ is even} \end{cases}$ Construct a recursive algorithm using this definition. How many multiplications are needed to calculate a10?
3.	A single-square-covered board is a board of 2n x 2n squares in which one square is covered with a single square tile. Show that it is possible to cover this board with triominoes without overlap.
	CHAPTER – 9 (PART – 1) INTRODUCTION TO C++
1.	Write about Binary operators used in C++ [M-2023]
2.	What are the types of Errors? [J-2019, M-2020, M-2022]
1.	What are tokens in C++? Explain types of tokens with example [S-2020]
2.	Explain use of header file with an example (Aug-2022)
	CHAPTER – 10 FLOW OF CONTROL
1.	Explain control statement with suitable example. [J-2023]
2.	What is an entry control loop? Explain any one of the entry controlled loop with suitable example. [J-2019, M-2020, S-2020, J-2024]
3.	Write a program to find the LCM and GCD of two numbers.
4.	Write programs to find the sum of the following series: (a) $X - \frac{x^2}{2!} + \frac{x^3}{3!} - \frac{x^4}{4!} + \frac{x^5}{5!} - \frac{x^6}{6!}$ (b) $X + \frac{x^2}{2} + \frac{x^3}{3} + \dots + \frac{x^n}{n}$
5.	Write a program to find sum of the series. $S = 1 + x + x^2 + \dots + x^n$ [S-2020]
1.	Explain if else statement with example [Aug-2022]
2.	What are the key differences between if... else and switch statements in C++? [M-2020, M-2024]
3.	Explain multi way branch statement (Switch) with a suitable example [M-2022]
4.	Explain parts of a loop [M-2022]
5.	Find the output of following program. [M-2022] [Refer book coding]
	CHAPTER – 11 FUNCTIONS
1.	Explain Call by value method with suitable example. [M-2019, M-2020, S-2020, AUG-2022, M-2023]
2.	What is Recursion? Write a program to find GCD using recursion. [M-2020]
3.	What are the different forms of function return? Explain with example.
4.	Explain scope of variable with example. [M-2020]
5.	Write a program to accept any integer number and reverse it. [J-2024]
1.	Write the output of the following program. [M-2023] [Refer book coding]
2.	Write a short note on pow () in C++. [J-2023 (II)]
3.	What is parameter and List its types (J-2023 (I))
	CHAPTER – 12 ARRAYS AND STRUCTURES

1.	Write a C++ program to find the difference between two matrixes. [J-2019]
2.	Write a C++ program to add two distances using the following structure definition struct Distance { int feet; float inch } d1 , d2, sum;
3.	Write the output of the following c++ program. [Refer book coding]
4.	Write the <u>output</u> of the following C++ program. [Refer book coding]
5.	Debug the error in the following program [Refer book coding]
1.	i) What is structure .What is its use? [M-2020] ii) Write the syntax and an example for structure. iii) How to access members of a structure? Give example.
2.	Debug the following C++ program [M-2019] [Refer book coding]
3.	Debug the following C++ program (J-2023) [Refer book coding]
CHAPTER – 13 OBJECT ORIENTED PROGRAMMING TECHNIQUES	
1.	Write the differences between Object Oriented Programming and procedural programming. [J-2019]
2.	What are the advantages of OOPS? [M-2020, S-2020, M-2022, J-2024]
3.	Write a note on the basic concepts that supports OOPs? [M-2019, M-2020, S-2020, J-2023]
CHAPTER – 14 CLASSES AND OBJECTS	
1.	Mention the differences between constructor and destructor. [M-2023]
2.	Define a class RESORT with the following description in C++ : Private members: Rno //Data member to store room number Name //Data member to store user name Charges //Data member to store per day charge Days //Data member to store the number of days Compute ()/*A function to calculate total amount as Days * Charges and if the total amount exceeds 11000 then total amount is 1.02 * Days *Charges */ Public member: GetInfo() /* Function to Read the information like name , room no, charges and days*/ DispInfo() /* Function to display all entered details and total amount calculated using COMPUTE function*/
3.	Write the <u>output</u> of the following. [M-2024] [Refer book coding]
1.	Write the output for the following program [M-2019] [Refer book coding]
2.	Write the output of the following [J-2019] [Refer book coding]
3.	Debug the following program (S-2020) [Refer book coding]
4.	Write the output for the following C++ program. [S-2020] [Refer book coding]
CHAPTER – 15 POLYMORPHISM	
1.	What are the rules for operator overloading?(or) Restrictions on Operator Overloading [M-2020, AUG-2022, J-2023, J-2024]
2.	Answer the question (i) to (v) after going through the following class. class Book { int BookCode ; char Bookname[20];float fees; public: Book() //Function 1 { fees=1000; BookCode=1; strcpy(Bookname,"C++"); } void display(float C) //Function 2 { cout<<BookCode<<":"<<Bookname<<":"<<fees<<endl; } ~Book() //Function 3 { cout<<"End of Book Object"<<endl; } Book (int SC, char S[],float F) ; //Function 4 ; 1) In the above program, what are Function 1 and Function 4 combined together referred as? 2) Which concept is illustrated by Function3? 3) What is the use of Function3? 4) Write the statements in main to invoke function1 and function2 5) Write the definition for Function4
3.	Write the output of the following program. [Refer book coding]
4.	Answer the questions based on the following program #include<iostream> 1) Mention the objects which will have the scope till the end of the program #include<string.h> using namespace std; 2) Name the object which gets destroyed in between the program class comp { public: 3) Name the operator which is over loaded and write the statement that invokes it. char s[10]; void getstring(char str[10]) 4) Write out the prototype of the overloaded member function { strcpy(s,str); } void operator==(comp); 5) What types of operands are used for the overloaded operator? }; void comp::operator==(comp ob) 6) Which constructor will get executed in the above program? { if(strcmp(s,ob.s)==0) cout<<"\nStrings are Equal"; Which constructor will get executed? Write the output of the program. else cout<<"\nStrings are not Equal"; } int main() { comp ob, ob1; char string1[10], string2[10]; cout<<"Enter First String:"; cin>>string1; ob.getstring(string1);

	cout<<"\nEnter Second String:"; cin>>string2; ob1.getstring(string2); ob==ob1; return 0; }
1.	What is function overloading? What are the rules for function overloading? [M-2024]
2.	What are the rules for function overloading? [J-2023 (B)]
3.	Write the output of the following program. [M-2020] [Refer book coding]
4.	Debug the following program (M-2020) [Refer book coding]
CHAPTER – 16 INHERITANCE	
1.	Explain the different types of inheritance. [J-2019, AUG-2022, M-2024]
2.	Explain the different visibility mode through pictorial representation. [M-2020, S-2020, J-2023]
3.	Consider the following c ++ code and answer the questions [S-2020 3M] class Personal 3.1 Which type of Inheritance is shown in the program? { int Class,Rno; 3.2 Specify the visibility mode of base classes. char Section; protected: 3.3 Give the sequence of Constructor/Destructor Invocation when object of class Result is created. char Name[20]; public: personal(); 3.4 Name the base class(/es) and derived class (/es). void pentry(); void Pdisplay(); }; 3.5 Give number of bytes to be occupied by the object of the following class: class Marks:private Personal { float M{5}; 3.6 Write the names of data members accessible from the object of class Result. protected: char Grade[5]; 3.7 Write the names of all member functions accessible from the object of class Result. public: Marks(); 3.8 Write the names of all members accessible from member functions of class Result. void Mentry(); void Mdisplay(); }; class Result:public Marks { float Total,Agg; public: char FinalGrade, Commence[20]; Result(); void Rcalculate(); void Rdisplay(); };
4.	Write the output of the following program [Refer book coding]
5.	Debug the following program. [M-2022] [Refer book coding]
1.	Debug the following C++ program. [M-2023] [Refer book coding]
2.	Debug the following C++ program [M-2024] [Refer book coding]
CHAPTER – 17 COMPUTER ETHICS AND CYBER SECURITY	
1.	What are the various crimes happening using computer?
2.	What is piracy? Mention the types of piracy? How can it be prevented?
3.	Write the different types of cyber-attacks. [J-2019,M-2023]