Version No.				
4	0	0	7	2

ROLL NUMBER					

⓪	●	●	⓪	⓪
①	①	①	①	①
②	②	②	②	●
③	③	③	③	③
●	④	④	④	④
⑤	⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥	⑥
⑦	⑦	⑦	●	⑦
⑧	⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨	⑨

⓪	⓪	⓪	⓪	⓪	⓪
①	①	①	①	①	①
②	②	②	②	②	②
③	③	③	③	③	③
④	④	④	④	④	④
⑤	⑤	⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥	⑥	⑥
⑦	⑦	⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨	⑨	⑨

COMPUTER SCIENCE
HSSC-II

SECTION – A (Marks 13)

Time allowed: 20 Minutes

Section – A is compulsory. All parts of this section are to be answered on this page and handed over to the Centre Superintendent. Deleting/overwriting is not allowed.

Do not use lead pencil.

حصہ اوّل لازمی ہے۔اس کے جوابات اسی صفحہ پر دے کر نگرانِ مرکز کے حوالے کریں۔کاٹ کر دوبارہ لکھنے کی اجازت نہیں ہے۔لیڈ پنسل کا استعمال ممنوع ہے۔

Answer Sheet No. _____

ہر سوال کے سامنے دیے گئے، کریکولم کے مطابق درست دائرہ کو پُر کریں۔ **Invigilator Sign.** _____

Fill the relevant bubble against each question according to curriculum: **Candidate Sign.** _____

	Question	A	B	C	D	A	B	C	D
1.	The technique that reuses an existing class to build a new class is known as:	Polymorphism	Inheritance	Data hiding	Function overloading	○	○	○	○
2.	The program in execution is called:	Web browser	File	Kernel	Process	○	○	○	○
3.	In flow chart the (parallelogram) symbol is used to represent: 	Arithmetic operations	Start	Decision	Input/output operations	○	○	○	○
4.	The step by step procedure to solve a problem is called:	Direct implementation	Algorithm	Flow chart	Coding	○	○	○	○
5.	In file handling stream is a:	Series of variable address	Series of variables	Series of bytes	Series of constants	○	○	○	○
6.	A type of member function that is preceded by tilde sign ~ is called:	Polymorphism	Destructor	Object	Constructor	○	○	○	○

7.	What will be the output of the following expression?
	`int x=20, y=3;`
	`cout<<x%y;`
		2	6	0	5	○	○	○	○

8.	Which of the following loops is called post-test loop?	Nested for loop	For loop	While loop	Do-while loop	○	○	○	○
9.	Which of the following is **correct** syntax of string declaration?	`char book [30];`	`int book [30];`	`char book {30};`	`char book { };`	○	○	○	○
10.	`int arr[5]={9,10,12,19,98};` What will be stored at `arr[4];`	10	9	98	19	○	○	○	○
11.	The parameters used in function call are called:	Local parameters	Formal parameters	Global parameters	Actual parameters	○	○	○	○
12.	Which of the following functions is used to find if the control has reached the end of file or not?	`eof( )`	`bof( )`	`gets( )`	`puts( )`	○	○	○	○
13.	The ability to use an operator or function in multiple ways is called:	Virtual function	Inheritance	Polymorphism	Data hiding	○	○	○	○

COMPUTER SCIENCE HSSC–II

Time allowed: 2:40 Hours **Total Marks Sections B and C: 62**

SECTION – B (Marks 42)

Q. 2 Answer the following questions briefly. **14x3=42**

(i)	Write down one application for each of the following types of operating systems. **a.** Time-sharing **b.** Real time **c.** Embedded	03	OR	Write down any three differences between process and thread.	03
(ii)	How is protection system important in an operating system?	03	OR	Write down any three responsibilities of system analyst.	03
(iii)	Briefly describe any three types of deployment phase.	03	OR	Briefly describe the five states of process with diagram.	03
(iv)	Write down any three differences between if-else-if and switch statements.	03	OR	What is understood by functional and non-functional requirements in requirement gathering phase of SDLC?	03

(v)	What will be the output of following code segment?
	`int i=3;`
	`int j=i++;`
	`int k=++i;`
	`cout<<i<< " " <<j<< " " <<k;`
		03	OR	What will be the output of the following code segment?
				`for(int i=0; i<3;i++)`
				`{`
				`cout<< "Enter a character";`
				`cin>>ch;`
				`out.put(ch);`
				`}`
					03

(vi)	What will be the output of the following code?
	`int m=5, c=0;`
	`while(c<100)`
	`{`
	`m=m+1;`
	`c=c+1;`
	`}`
	`cout<<m;`
		03	OR	Write down the output of the following code segment.
				`{int a=7, b=12;`
				`fun(a,b);`
				`cout<<a<< " " <<b;`
				`}`
				`void fun(int m,int &n)`
				`{`
				`n=n-2*m;`
				`m=2*m;`
				`}`
					03

(vii)	`int arr[3][4]={{12,0,5,10},{7,8,19,30},{33,1,2,22}};` Write down a statement that replaces 19 with 50.	03	OR	Write a program that inputs a string and displays the number of character in it.	03
(viii)	Fill in the following table with Yes/No. Access / Public / Private Access of members in same class Access of members in derived class Access of members outside the class	03	OR	Consider the following array declaration: `int arr[8];` a. How many elements are there in the array? b. Determine the highest index of the array. c. Determine the lowest index of the array.	03
(ix)	What are strings? Briefly explain how to declare a string.	1+2	OR	Differentiate between local and static variables.	03
(x)	Compare binary files with text files in light of file handling in C++.	03	OR	Briefly describe any three modes of file opening in C++.	03
(xi)	What is the use of reference operator (&) in pointers?	03	OR	How is an array different from a simple variable? Explain with an example.	03
(xii)	Write down the syntax of using the `EOF` function in file handling.	03	OR	Briefly explain the concept of data hiding in classes using an example.	03
(xiii)	Write down any two advantages and one disadvantage of function overloading.	03	OR	Briefly explain the following terms related to array: **a.** Size of array **b.** Name of array **c.** Index	03
(xiv)	Explain the role of Project manager in SDLC.	03	OR	What is the use of break statement in C++?	03

SECTION – C (Marks 20)

Note: Attempt the following questions. **(5x4=20)**

Q.3	Write down a C++ program that finds the area and perimeter of a square.	05	OR	Why we use pointers? What is the difference between pointer variable declaration and initialization? Explain with example.	3+1 +1
Q.4	Write a C++ program that contains two integer data members which are initialized to 100 when an object is created. It has a member function `avg()` that displays the average of data members.	05	OR	Explain the difference between constant and variable with the help of programming examples.	3+2
Q.5	Explain the use of following in C++ by using examples. • Continue statement • Exit function	05	OR	Write down the importance of using functions in C++. Also explain the following components of function: • Function definition • Function call	2+2 +1
Q.6	Write a C++ program that inputs a positive integer and prints whether it is prime or composite.	05	OR	Explain the concept of function signature. Also write down any four advantages of using functions in C++.	1+4