

Please check that this question paper contains **7** questions and **7** printed pages.

CLASS-XI
COMPUTER SCIENCE

Time Allowed : 3 Hrs.

Maximum Marks : 70

General Instructions :*All the questions are compulsory.**The paper contains 7 questions.**Programming language used : C++*

S. No.	Sub Part	Question	Marks
1.	(a)	How is data different from information ?	(1)
	(b)	What do you understand by GUI ?	(1)
	(c)	Differentiate between the following : (i) Virus and Worm (ii) Utility software and Application software	(2+2)
	(d)	Convert the following : (i) $(27.625)_{10} = (?)_2$ (ii) $(A42)_{16} = (?)_8$ (iii) $(23.25)_8 = (?)_{10}$ (iv) $(11100.1010)_2 = (?)_{16}$	(4)
2.	(a)	Identify the type of errors (Syntax, Logical, Run-time) : (i) <pre>int a=10; int b=20; c=b-a; cout<<"sum of"<<a<<"and"<<b<<"="<<c;</pre> (ii) <pre>a=7/0;</pre> (iii) <pre>ra+one=mov;</pre>	(1)
	(b)	Give an example of single line comment and multiline comment each.	(2)

	<p>(c) How many times the following loops will be executed :</p> <p>(i) <code>for(int i=1;i<=10;i++)</code> <code>{cout<<i++;}</code></p> <p>(ii) <code>int i=11;</code> <code>while(i<11)</code> <code>(cout<<i;}</code></p> <p>(iii) <code>int i=5;</code> <code>do {</code> <code>cout<<i;</code> <code>} while(i<1);</code></p> <p>(d) A storekeeper wants to keep track of his inventory. He wants to give each item a code no; and a name, He also wants to store the price of each item alongwith quantity in stock. Suggest suitable variable names and their data types.</p> <p>(e) What is an infinite loop ?</p> <p>(f) What is a program ?</p>	<p>(1+1+1)</p> <p>(2)</p> <p>(1)</p> <p>(1)</p>
<p>3.</p>	<p>(a) Find out the errors in the following C++ statements :</p> <p>(i) <code>cout<<"a="a;</code></p> <p>(ii) <code>for (x=±1; x < 10; x++)</code></p> <p>(iii) <code>x = + 2;</code></p> <p>(iv) <code>break=x*y</code></p> <p>(b) Observe the following C++ code carefully and rewrite the same after removing all the syntax error(s) present in the code. Ensure that you underline each correction in the code. Important Note: - All the desired header files are already included, which are required to run the code. - Correction should not change the logic of the program.</p> <pre>#define Change(A,B) 2*A+B; void main() { Float X, Y,F; cin>>X>>Y; F=Change[X, Y]; cout<<"Result:"<<F<<endl; }</pre>	<p>(2)</p> <p>(2)</p>

	<p>(c) Observe the following C++ code and write the name(s) of the header file(s), which will be essentially required to run it in a C++ compiler :</p> <pre>void main() { float Area, Side; cin>>Area; Side=sqrt(Area); cout<<"One Side of the Square:"<<Side<<endl; }</pre> <p>(d) Determine the number of bytes required to store</p> <table border="0"> <tr> <td>BOOK_NO</td> <td>integer type</td> </tr> <tr> <td>BOOK_TITLE</td> <td>20 Characters</td> </tr> <tr> <td>PRICE</td> <td>float (price per copy)</td> </tr> <tr> <td>Type</td> <td>char</td> </tr> </table> <p>(e) Construct logical expressions to represent the following conditions :</p> <p>(i) salary is in the range 8000 to 10000</p> <p>(ii) ch is an uppercase letter</p> <p>(iii) value is not in the range 10 and 20</p> <p>(iv) a is an odd number</p> <p>(f) Write a c++ program to input a number and print its factorial.</p> <p>(g) What is difference between '/' and '%' operators in c++ ? Explain with example.</p>	BOOK_NO	integer type	BOOK_TITLE	20 Characters	PRICE	float (price per copy)	Type	char	<p>(2)</p> <p>(2)</p> <p>(2)</p> <p>(2)</p> <p>(2)</p> <p>(2)</p>
BOOK_NO	integer type									
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Type	char									
4.	<p>(a) Find the output of the following program :</p> <pre>#include <iostream> void display(charc= '*', intn= 1); int main() { display(); display('#'); display('\$', 5); return 0; } void display(char c, int n) { for(int i = 1 ; i <=n; ++i) { cout<<c; } cout<<endl; }</pre>	<p>(3)</p>								


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    int temp;
temp=a;
a=b;
b=temp;
}
void swap2(int &a,int &b)
{
    int temp;
temp=a;
a=b;
b=temp;
}
void main()
{
    int x=2;
    int y=3;
swap1 (x,y);
cout<<x<<”,”<<y<<endl; //statement 1
swap2(x,y);
cout<<x<<”,”<<y<<endl; //statement 2
}

```

- (i) What will be the output of statement 1 and statement 2 ? Justify your answer.
- (ii) Identify the type of parameter (actual and formal) from the following parameters. Give reason to justify your answer.
- (d) Write a function in c++ to print the **product of each column** of a two dimensional integer array passed as the argument of the function :

Explain : If the 2-D array contains :

2	3	1
6	1	6
1	5	2
6	4	7

Then the output should appear as :

Product of column 1 = 72

Product of column 2 = 60

Product of column 3 = 84

(3)

7.	<p>(a) Give the output of the following program (Assuming that all required header files are included in the program)</p> <pre>#include<iostream.h> struct TD { int x,y,z; }; void MvIn(TD &P, int step) { P.x+=step; P.y-=step; P.z+=step; } void main() { TD ob={ 15,25,5}; MvIn(ob,3); cout<<ob.x<<','<<ob.y<<','<<ob.z<<endl; }</pre> <p>(b) Consider the following structure of date</p> <pre>struct Date { int dd,mm,yy; };</pre> <p>Write a function int Compare_date(date d1,date d2) which takes 2 dates variables as parameter and returns 1 if the dates are same and 0 if the dates are different or (Assuming both the dates are valid)</p> <table data-bbox="296 1391 1187 1733"> <thead> <tr> <th>E.g.</th> <th>dd</th> <th>mm</th> <th>yy</th> </tr> </thead> <tbody> <tr> <td>If value of 1st date variable is</td> <td>2</td> <td>10</td> <td>2014</td> </tr> <tr> <td>And value of 2nd date variable is</td> <td>4</td> <td>12</td> <td>2014</td> </tr> <tr> <td>The function should return</td> <td colspan="3">: 0</td> </tr> <tr> <td>If value of 1st date variable is</td> <td>4</td> <td>12</td> <td>2014</td> </tr> <tr> <td>And value of 2nd date variable is</td> <td>4</td> <td>12</td> <td>2014</td> </tr> <tr> <td>The function should return</td> <td colspan="3">: 1</td> </tr> </tbody> </table> <p>Write a program to declare 2 date variables. Accept values in 2 date variables and invoke the function Compare_date().</p>	E.g.	dd	mm	yy	If value of 1 st date variable is	2	10	2014	And value of 2 nd date variable is	4	12	2014	The function should return	: 0			If value of 1 st date variable is	4	12	2014	And value of 2 nd date variable is	4	12	2014	The function should return	: 1			(2)
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		(2+2=4)																												