

**KENDRIYA VIDYALAYA SANGATHAN ERNAKULAM REGION  
PREBOARD EXAMINATION 2018-19**

**CLASS :XII**

**MAX. MARKS : 70**

**SUBJECT : COMPUTER SCIENCE**

**TIME :3 HRS**

Instructions:

- (i) Please check that this question paper contains 8 printed pages.
- (ii) Please check that this question paper contains 7 questions
- (iii) All questions are compulsory.
- (iv) Programming language C++

1	(a)	Write the type of C++ tokens (keywords and user defined identifiers) from the following <ul style="list-style-type: none"> <li>(i) case</li> <li>(ii) _delete</li> <li>(iii) WHILE</li> <li>(iv) 21stName</li> </ul>	(2)
	(b)	Jay has just started learning C++. He typed the following C++ code and during the compilation of the code, he got some errors. When Jay asked his teacher, the teacher told him to include necessary header files in the code. Write the names of those header files, which Jay needs to include, for successful compilation and execution of the following code. <pre>void main() {cout&lt;&lt;"We win !"&lt;&lt;endl;   cout&lt;&lt;strlen("The World")&lt;&lt;endl ; }</pre>	(1)
	(c)	Rewrite the following program after removing the syntax error(s) if any. Underline each correction. <pre>Typedef String[80] char void main( ) {     String S;     for (L=0 ;L&lt;26;C++)     S[L]=L+65 ; S[L]='\0';     cout&lt;&lt;S&lt;&lt;endl; }</pre>	(2)
	(d)	What will be the output of the following program <pre>void main()</pre>	(2)

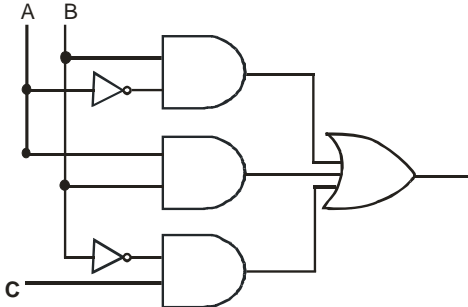
	<pre> { float *Ptr,Points[]={20,50,30,40,10}; Ptr=Points ; cout&lt;&lt;*Ptr&lt;&lt;endl; Ptr+=2 ; Points [2]+=2.5; cout&lt;&lt;*Pt r&lt;&lt;endl ; Ptr++; (*Ptr)+=2.5; cout&lt;&lt;Points[3]&lt;&lt;endl; } </pre>	
(e)	<p>Find the output of the following program :</p> <p>Note: Assume all the required header files are already being included in the program.</p> <pre> class Calc {     char Grade;     int Bonus; public: Calc() {Grade='E' ; Bonus=0;} void Down(int G) {     Grade-=G; } Void Up(int G) {     Grade+=G;     Bonus++; } void Show() {     cout&lt;&lt;Grade&lt;&lt;"#"&lt;&lt;Bonus&lt;&lt;endl; } };  void main() {     Calc c;     C.Down(2);     C.Show();     C.Up(7);     C.Show();     C.Down(2)     C.Show();} </pre>	(3)

	(f)	<p>Find the correct possible output(s)</p> <pre>#include&lt;stdlib.h&gt; #include&lt;iostream.h&gt; void main() { randomize(); char city[ ]={"PKD", "EKM", "TVM", "KOL", "CAL"}; int ZEN; for(inti=0;i&lt;3;i++) { ZEN=random(2)+1; cout&lt;&lt;city[ZEN]&lt;&lt;"@"; } }</pre> <p>(i) PKD@ EKM @TVM@  (ii) EKM @TVM@ EKM @  (iii) TVM@KOL@CAL@  (iv) TVM@ EKM @TVM@</p>	(2)										
2	(a)	<p>What is a copy constructor? Give a suitable example in C++ to illustrate with its definition within a class and a declaration of an object with the help of it..</p>	(2)										
	(b)	<pre>class Complex { int x; int y; public: Complex(); //Function 1 void disp() //Function 2 {cout&lt;&lt;"The Complex number is : "&lt;&lt;x&lt;&lt;" + &lt;y&lt;&lt;"i"&lt;&lt;endl;} Complex(int, int); //Function 3 Complex(Complex &amp;abc); //Function 4 };</pre> <p>(i) Which category of constructor - Function 1 belongs to? Write an example illustrating the calls for Function 1.  (ii) Write the complete definition for Function 4.</p>	(2)										
	(c)	<p>Define a class DONOR with the following specifications :</p> <p>Private :</p> <table style="margin-left: 40px;"> <tr> <td>Donor number</td> <td>integer</td> </tr> <tr> <td>Name</td> <td>20 characters</td> </tr> <tr> <td>Blood group</td> <td>2 characters</td> </tr> </table> <p>Public :</p> <table style="margin-left: 40px;"> <tr> <td>Input( )</td> <td>A function to accept all the information</td> </tr> <tr> <td>Output( )</td> <td>A function to display all the</td> </tr> </table>	Donor number	integer	Name	20 characters	Blood group	2 characters	Input( )	A function to accept all the information	Output( )	A function to display all the	(4)
Donor number	integer												
Name	20 characters												
Blood group	2 characters												
Input( )	A function to accept all the information												
Output( )	A function to display all the												

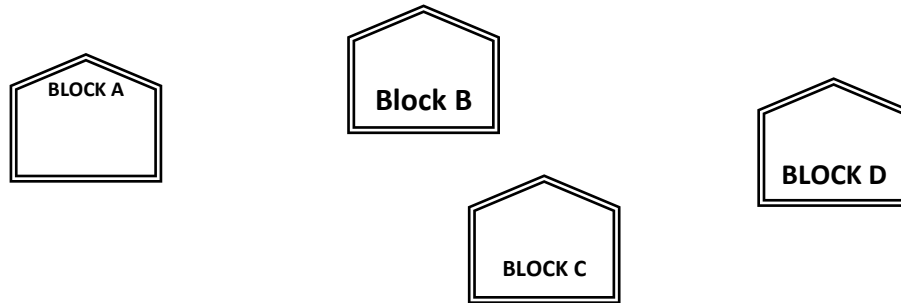
		<p>information  Checkgroup( )      A function with char * return to return Blood  group  Define functions with their given description.</p>	
	(d)	<p>Consider the following declarations and answer the questions given below:</p> <pre> class author {     char name[12];     double royalty; protected:     void register(); public:     author(){};     void enter();     void display(); }; class person {     char address[20]; protected:     float salary; public:     person(){};     void havelt();     void givelt(); };  class employee : private author, public person {     int ecode;     char dept[30]; public:     employee(){};     void start();     void show(); }; </pre> <p>i)Write the names of data members, which are accessible from object of class employee.  ii)Write the names of all the member functions which are accessible from object of class person.  iii)Write the data members which are accessible from member functions of class employee.  iv)How many bytes are required by an object belonging to class employee</p>	(4)
3	(a)	<p>Write the definition of a function Alter(int A[], int N) in C++, which should change all the multiples of 5 in the array to 5 and</p>	(3)

		rest of the elements as 0.										
	(b)	A two dimensional array P[40] [30] is stored in the memory along the column with each of its element occupying 4 bytes, find the address of the element P[20] [15],if the element P[15] [10] is stored at the memory location 7200.	(3)									
	(c)	Write a function in C++ to perform Insert operation in a dynamically allocated Queue containing names of students. struct stud { char Name[20]; stud *Link; };	(4)									
	(d)	Write a function CHANGE (intP[][5], int N, int M) in C++to display the sum of alternate elements from a two dimensional array . <table border="1" data-bbox="570 850 1122 968"> <tr> <td>11</td> <td>23</td> <td>61</td> </tr> <tr> <td>13</td> <td>91</td> <td>92</td> </tr> <tr> <td>15</td> <td>12</td> <td>56</td> </tr> </table> Thefunctionshoulddisplayoutputas: Sum=234	11	23	61	13	91	92	15	12	56	(2)
11	23	61										
13	91	92										
15	12	56										
	(e)	Evaluate the following postfix expression using a stack and show the contents of the stack after each operation. 45,45,+,32,20,10,/,-,*	(2)									
4	(a)	Consider a file F containing objects P of class PLAYER. (i) Write statement to position the file pointer to the end of the file. (ii) Write statement to return the number of bytes from the beginning of the file to the current position of the file pointer.	(1)									
	(b)	Write a function in C++ to count the number of vowels present in a text file BOOK.txt	(2)									
	(c)	Write a definition for function Economic() in C++ to read each record of a binary file ITEMS.DAT, find and display those items, which costs less than 2500. Assume that the file ITEMS.DAT is created with the help of objects of class ITEMS, which is defined below: class ITEMS { int ID; char GIFT[20];	(3)									



6	(a)	State and prove De Morgans Law using truth table.	(2)																																				
	(b)	Derive a Canonical POS expression for a Boolean function F, represented by the following truth table : <table border="1" data-bbox="521 331 924 737"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> <th>F(A,B,C)</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>0</td><td>0</td><td>1</td><td>1</td></tr> <tr><td>0</td><td>1</td><td>0</td><td>0</td></tr> <tr><td>0</td><td>1</td><td>1</td><td>1</td></tr> <tr><td>1</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>1</td><td>0</td><td>1</td><td>0</td></tr> <tr><td>1</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>1</td><td>1</td><td>1</td><td>1</td></tr> </tbody> </table>	A	B	C	F(A,B,C)	0	0	0	0	0	0	1	1	0	1	0	0	0	1	1	1	1	0	0	0	1	0	1	0	1	1	0	1	1	1	1	1	(1)
A	B	C	F(A,B,C)																																				
0	0	0	0																																				
0	0	1	1																																				
0	1	0	0																																				
0	1	1	1																																				
1	0	0	0																																				
1	0	1	0																																				
1	1	0	1																																				
1	1	1	1																																				
	(c)	Write the equivalent Boolean Expression F for the following <b>circuit diagram</b> : 	(2)																																				
	(d)	Reduce the following Boolean Expression using K-map: $F(X, Y, Z, W) = \Sigma(0,1,3,4,5,7,9,10,11,13,15)$	(3)																																				
7	(a)	Write one name of wireless and one wired communication medium	(1)																																				
	(b)	(a)Expand the following (i) CDMA                      (ii) GSM	(1)																																				
	(c)	What is web2.0.?	(1)																																				
	(d)	Name one server side scripting language and one client side scripting language.	(1)																																				
	(e)	A Company has set up its new centre at Delhi for its office and	(4)																																				

web based activities. It has 4 blocks of buildings as shown in the diagram below:



**Centre to centre distances between various blocks**

Block A to Block B	50 m
Block B to Block C	150 m
Block C to Block D	25 m
Block A to Block D	170 m
Block B to Block D	125 m
Block A to Block C	90 m

**Number of Computers**

Block A	25
Block B	50
Block C	125
Block D	10

- (i) Suggest a cable layout of connections between the blocks.  
 (ii) Suggest the most suitable place (i.e. block) to house the server of this organisation with a suitable reason.  
 (iii) Suggest the placement of the following devices with justification  
 (i) Repeater                      (ii) Hub/Switch  
 iv) The organization is planning to link its head office situated in Delhi with the office at Srinagar. Suggest an economic way to connect it; the company is ready to compromise on the speed of connectivity. Justify your answer.

(f)	Which type of network will be formed when you connect 10 PCs in a computer lab using coaxial cables and a switch?	(1)
(g)	Kabir wants to purchase a Book online and placed the order for that book using an e-	(1)



	<p>commerce website. Now, he is going to pay the amount for that book online using his Mobile, he needs which of the following to complete the online transaction:-</p> <ul style="list-style-type: none"><li>i. A bank account,</li><li>ii. A Mobile connection/phone which is attached to above bank account,</li><li>iii. The mobile banking app of the above bank installed on that mobile</li><li>iv. Login credentials(UserId&amp; Password) provided by the bank</li><li>v. All of above.</li></ul>	
--	--	--