

INTERNATIONAL INDIAN SCHOOL, DAMMAM

SECOND TERMINAL EXAMINATION 2017

SUBJECT: COMPUTER SCIENCE

MAX. MARKS: 70

CLASS: XI

TIME: 3 HRS

SET A

General Instructions:

- (a) All questions are compulsory
- (b) Programming language use C++

- 1.a. What is the difference between call by value and call by reference? Also, give a suitable C++ code to illustrate both. 2
- b. Construct a function declaration /prototype for description given below :
Calc() takes two integers and a character argument and returns nothing. 1
- c. What is default parameter /argument in a function? Give a suitable C++ code to illustrate it. 2
- d. What are the three steps in using a function? 1
- e. Differentiate between strcpy() and strcat (). 1
- f. Element VALUE[30] is which element of array? 1
- g. Consider the following array declarations: 2
float A[5][10]
short B[12]
 - i) Find the number of elements in each array.
 - ii) Find the total number of bytes required to store each array.
- 2.a. What are the advantages and disadvantages of floating point number over integers? 2
- b. What are data type modifiers? 1
- c. What is a variable ? In C++ , two values are associated with a symbolic variable. What are these? 2
- d. What is the process of type promotion? What is integral promotion? 2
- e. X1 and X2 are two double variables that you want to add as integers and assign to an integer variable RESULT. Construct a C++ statement for doing so. 1

- f. What is the significance of **break** statement in a switch statement? What is the effect of absence of **break** in a switch statement? 2
- 3.a. Rewrite the following using if-else statement. 2

```
int RESULT , X= 25;
RESULT = (X > 10 ? ( X >= 20 ? 200 : 100 ) : 150);
```
- b. Rewrite using **do while** loop 2

```
#include<iostream.h>
void main()
{ int x = 0;
  for( int i =0; i<15 ; i++)
    if(i % 3 == 0)
    { x++;
      cout<< x;
    }
}
```
- c. Evaluate the following expression if a = 2 , b = -1, c = 1, d = -3. 2
 $a - c < b \ || \ d < c + b \ \&\& \ a \geq d - c \ \&\& \ b \geq !(a + c - d)$
- d. Write the corresponding C++ expression for the following mathematical expression: 1
 $V = \frac{4}{3}\pi r^3$
- e. Construct logical expressions to represent the following conditions: 2
 i) Price is in the range 5000-10000 or category is 1
 ii) X is even and positive
- f. Observe the following program very carefully and write the names of those header file(s) , 1
 which are essentially needed to compile and execute the following program successfully:

```
void main()
{
  char str[ ] = "We love Peace";
  int count = 0;
  while(str[count] != '\0')
  { if (isalnum(str[count]))
    str[count++] = '@';
    else
    str[count++] = '#';
  }
  puts(str);
}
```
- g. How many times will the following loop execute? 1

```
int x=0, y=2;
while(++y < 5)
  x += y--;
```
- h. State why the expression is invalid . How would you correct it? 1

```
int Cube[ ][ ] = {2,4,6,7,5,1};
```

4. Write the output of the following program segments.(Assuming all required header files are included in)
- a. void main() 2
- ```
{
 int a= 9, b=5, x, y=4;
 x = 1/4 * a;
 y += a++ + b++/2;
 cout<<"x="<<x<<endl<<"y="<<y<<endl;
 cout<<"a="<<a<<endl<<"b="<<b;
}
```
- b. void main() 2
- ```
{
    char S[ ] = "HARMONIOUS";
    int L = strlen(S);
    for(int c=0 ; c < L-1 ; c+= 2)
    {
        char CT = S[c];
        S[c] = S[c+1];
        S[c+1] = CT;
    }
    for( c = 1; c<L; c+= 2)
    if (S[c ] >= 'M' && S[c ] <= 'U')
        S[c] = '@';
    cout<< S;
}
```
- c. void main() 2
- ```
{
 int a = 15 , b;
 for(int i=0; i< a; i++);
 cout << ++i << endl;
 b = a;
 ++a;
 b++;
 cout<< a <<"\n"<< b<<"\n"<< --b<<endl;
}
```
- d. void main( ) 2
- ```
{
    int b[10];
    for(int i=1;i<3;i++)
    for(int j=1; j<3; j++)
    {
        b[i] = 5* i + j;
        cout<<"\n"<<b[i];
    } }
```

- e. `void main()` 2
`{`
`int A[]={5,10,15,20};`
`for (int i=1; i<4;i++)`
`A[i-1] += A[i];`
`for(int j=3;j>=0;j--)`
`cout<<A[j] <<"#";`
`}`
5. Rewrite the following C++ code after removing any/all syntactical errors with each correction underlined.
 Note : Assume all required header files are already being included in the program.
- a. `void main()` 2
`{`
`cout<<"Enter an Alphabet";`
`cin>>CH;`
`switch(ch)`
`case 'A' cout<<"Ant"; Break;`
`case 'B' cout <<"Bear"; Break;`
`}`
- b. `void main()` 2
`{`
`const int size;`
`cin>> size;`
`int arr[size]=[10,20,30,40,50];`
`for(i = 0; i<size ; i++)`
`cout >> arr[i];`
`}`
6. Write C++ program for the following.
- a. Write a program to check whether the given number is palindrome or not. 4
- b. Write a program to count and display the number of vowels in a string. 4
- c. Write a program to search a given number in a list of numbers using linear search and display its position. 4
- d. Write a program to find the sum of each row of a given matrix. 4
- e. Write a program to find the sum of the elements above and below the main diagonal of a square matrix. 4
- f. Write a program using user defined function FACT() to find the factorial of a number. Pass the number as argument and return the factorial. 4