

## COMMON HALF YEARLY EXAMINATION - DECEMBER 2019

Standard - 11

Reg. No.

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## PART - III - COMPUTER SCIENCE

Time Allowed: 3.00 Hours

Maximum Marks: 70

- Instructions:**
1. Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.
  2. Use Blue or Black ink to write and underline and pencil to draw diagrams.

## PART - I

Note: i) Answer all the questions.

15×1=15

ii) Choose the most appropriate answer from the given four alternatives and write the option code and the corresponding answer.

- 1) Which is the main component used in First Generation?
  - a) Microprocessor
  - b) Transistors
  - c) Vacuum tubes
  - d) Integrated circuits
- 2) Which is a collection of wires used for communication between the internal components of a computer?
  - a) Program counter
  - b) BUS
  - c) Word size
  - d) Central Processing Unit
- 3) Which one of the following is system software?
  - a) MS-Word
  - b) VLC player
  - c) MS-Excel
  - d) Language Processor
- 4) Which Log Off option, puts the computer into a low-power mode that retains all running programs and open windows in computer memory for a super-quick restart?
  - a) Sleep
  - b) Lock
  - c) Log Off
  - d) Restart
- 5) Which are named boxes for storing data?
  - a) Control Flow
  - b) Algorithm
  - c) Variables
  - d) Functions
- 6) Suppose  $u, v = 5, 10$ , before the assignment. What are the values of  $u$  and  $v$  after the sequence of assignments?
 

$u := v+10$   
 $v := u+10$

  - a)  $u, v = 10, 10$
  - b)  $u, v = 30, 10$
  - c)  $u, v = 20, 10$
  - d)  $u, v = 20, 30$
- 7) Which is the key to construct and to reason about iterative algorithms?
  - a) Loop invariant
  - b) Composition
  - c) Base Case
  - d) Decomposition
- 8) Which of the following operator is extractor operator in C++?
  - a)  $<<$
  - b)  $>>$
  - c)  $<>$
  - d)  $! =$
- 9) How many times the following loop will execute?
 

for (int  $i=2$ ;  $i \leq 10$ ;  $i+=2$ )

  - a) 5
  - b) 4
  - c) 6
  - d) 3



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XI - Computer Science

- 10) Which is a multiway branch statement in C++?  
a) continue                      b) switch                      c) break                      d) while
- 11) cin>>n[3]; to which element does this statement accept the value?  
a) 3                      b) 2                      c) 5                      d) 4
- 12) Which of the following is a user defined data type?  
a) char                      b) float                      c) class                      d) int
- 13) The variable declared inside the class are known as data members and the functions are known as  
a) data functions                      b) member functions  
c) value functions                      d) private functions
- 14) Which one of the following C++ operator can be overloaded?  
a) +                      b) ?:                      c) ::                      d) sizeof
- 15) A computer network security that monitors and controls incoming and outgoing traffic is  
a) Cookies                      b) Worms                      c) Firewall                      d) Virus

**PART - II****Note: Answer any 6 questions. Question No. 24 is compulsory:****6×2=12**

- 16) Write note on warm booting.
- 17) Write short note on HDMI.
- 18) What is Fault Tolerance?
- 19) Write a short note on recursion.
- 20) What is the use of setw( ) format manipulator?
- 21) Write note on conditional operator in C++.
- 22) What are the main functions of the constructor?
- 23) What is meant by encryption and decryption?
- 24) What is meant by nested structure? Give an example.

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**PART - III****Note: Answer any six questions. Question No. 33 is compulsory:****6×3=18**

- 25) a) What is wordlength?  
b) What is bit?
- 26) Write note on various types of ports in computer.
- 27) List the functions of Windows Operating System.
- 28) Write about notations for algorithms.
- 29) What is string literal? Give an example.
- 30) Write about default argument in C++ functions with example.
- 31) List the characteristics of destructors.
- 32) Write note on TSCII.
- 33) List the restrictions to be kept in mind while implementing operator overloading.



**PART - IV****Note: Answer all questions.****5×5=25**

34) a) Write in detail about the characteristics of microprocessor.

**(OR)**

- b) i) What is algorithm?  
 ii) Explain the following principles and techniques for designing algorithms.  
 (A) Specification (B) Abstraction  
 (C) Composition (D) Decomposition

35) a) i) What is type conversion in C++?

ii) Explain types of conversions with suitable example.

**(OR)**

b) Explain about if, if ..... else and nested if statements in C++ with syntax and example.

36) a) Write a C++ program to find sum of the series:

$$S = 1 + x + x^2 + \dots + x^n$$
**(OR)**

b) Write in detail about the following C++ functions with general form and suitable example.

- (i) isalnum() (ii) isdigit() (iii) strcpy()  
 (iv) strcmp() (v) strcat()

37) a) Explain the main features of object oriented programming with its advantages and disadvantages. **(OR)**

b) Write the output for the following C++ program.

Assume the values for age as 23, height as 161.5 and weight as 45.

```
#include<iostream>
using namespace std;
struct student
{
    int age;
    float height, weight;
}obj;
int main()
{
    cout<<"\nEnter the age:";
    cin>>obj.age;
    cout<<"\nEnter the height:";
    cin>>obj.height;
    cout<<"\nEnter the weight:";
    cin>>obj.weight;
    cout<<"\nYour details:";
    cout<<"\nAge:"<<obj.age;
```



```

cout<<"\nHeight:"<<obj.height;
cout<<"\tWeight:"<<obj.weight;
return 0;

```

```

}

```

- 38) a) i) Explain the types of inheritance.  
 ii) What are the points to be observed while defining the derived class?

(OR)

- b) Debug the given C++ program to get the following output:

**Output**

The width of the box is :20

The length of the box is :67

**Program**

```

#include<stream>
using namespace std;
class Box
{
    double width;
public:
    double length;
    int printWidth()
    {
        cout<<"\nThe width of the box is:"<<width;
        cout<<"\nThe length of the box is:"<<length;
    }
    void setWidth(double w, l);
}
void Box::setWidth(double w, double l)
{
    width=w;
    length=l;
}
int MAIN()
{
    Box obj;
    obj.setWidth(67.0, 20.0);
    obj.print Width();
    exit 0;
}

```

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