X/19/CSc (N)

2 0 1 9

COMPUTER SCIENCE

(New Course)

(FOR REGULAR CANDIDATES ONLY)

Full Marks : 80
Pass Marks : 24

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

(*Maximum Marks* : 30)

(Objective-type Questions)

1. Choose and write the correct answer for the following : 1×10=10

(a) Which of the following is an open-source operating system?
  (i) Mac OS
  (ii) MS-DOS
  (iii) Microsoft Windows
  (iv) Linux

(b) Which of the following DOS commands is used to display the content of a file?
  (i) PRINT
  (ii) TYPE
  (iii) EDIT
  (iv) CLS

                                  [P.T.O.

(c) An IP address is a string of _____ bit numeric address.

    (i) 32

    (ii) 24

    (iii) 16

    (iv) 8

(d) Which of the following is an empty tag?

    (i) <H1>

    (ii) <P>

    (iii)

    (iv) <NOBR>

(e) Indefinite loop is a/an _____ error.

    (i) logical

    (ii) execution

    (iii) syntax

    (iv) compiler

(f) The keyword _____ specifies that the value of the variable will not change during the execution of the program in C++.

    (i) fixed

    (ii) absolute

    (iii) constant

    (iv) const

(g) Java was initially known as

   (i) OK

  (ii) OKA

 (iii) OAK

 (iv) AOK

(h) All Java programs should have _____ function. It is considered as the entry point into the program.

   (i) user-defined

  (ii) main()

 (iii) library

 (iv) static

(i) Malware comprises of

   (i) viruses

  (ii) worms

 (iii) trojans

 (iv) All of the above

(j) Which of the following information security system provisions in e-commerce ensures that your information must not be tampered or damaged?

   (i) Privacy

  (ii) Integrity

 (iii) Authentication

 (iv) Non-repudiation

(4)

(Short Answer-type Questions)

2. Answer any *three* questions in *2–3* sentences :   2×3=6

(a) Define system software. What are its functions?

(b) Differentiate between interpreter and compiler.

(c) What is the base of a number system? Give example.

(d) Draw the logical symbol of EXNOR gate with two inputs.

(e) Convert $(72)_{10}$ into binary equivalent.

3. Answer any *three* questions in *2–3* sentences :   2×3=6

(a) Differentiate between internet and intranet.

(b) List out different types of wired and wireless connections.

(c) Name any four different types of protocols used over an Internet network.

(d) Name the tag and attribute for the following :

(i) To draw a blue horizontal line in a Web page

(ii) To make a bulleted list using the circle bullets

4. Answer any *two* questions in *2–3* sentences :   2×2=4

(a) Evaluate the following expressions and display the output :

int x, y=3, z=5;

(i) x=(y>z)?z:y;

cout<<x;

(ii) x=++y−z%3;

cout<<x;

(b) List out the important features of Object-Oriented Programming Language.

(c) What do you mean by an identifier?

5. Answer any *two* questions in *2–3* sentences :   2×2=4

(a) Differentiate between while and do...while loops.

(b) What are relational operators? List all the relational operators with their usage.

(c) Write the steps to evaluate the following expression :

a=6+(b−c%2);

(6)

(*Maximum Marks* : 50)

(Descriptive-type Questions)

[Computer Fundamentals]

6.   *Either*

(a) Differentiate between CUI and GUI based operating systems with examples for each.   6

Or

(b) Write the commands in operating system to perform the following operations :   1½×4=6

   (i) Display all files with the extension .DOC in the current directory and all its subdirectories (in DOS)

   (ii) Remove Read-Only attribute from the file REPORT.TXT (in DOS)

   (iii) Open the file 'test.txt' using the text editor command (in Linux)

   (iv) Create a directory called 'subdir' in the current directory (in Linux)

7.   *Either*

(a) Add $(110111)_2$, $(11110)_2$ and $(1101)_2$. Write the ASCII equivalent character of the result obtained.   6

Or

(b) What are logic gates? Define AND and OR gate. Write their truth tables using two inputs.   2+2+2=6

(7)

[Internet Basics]

8.   *Either*

(a) What is modem? Explain the functions of a modem.   1+4=5

                                   Or

(b) Explain the functions of different parts of URL.   5

9.   *Either*

(a) Debug the following HTML code :   1×5=5

   (i) <BODY TEXT="BLUE" IMAGE=
                "C:\Users\myphoto.jpg" LINK="RED">

  (ii) <BASEFONT COLOUR="Green" FONTSIZE="6">

 (iii) <OL TYPE="SQUARE" START="1">

  (iv) <IMG LINK="image.jpg" TEXT="Picture Not Found">

   (v) <FRAMES SRC="A.html" NAME="Frame1"
                            SCROLLBAR=Yes>

                                   Or

(b) Write an HTML code to display the table as shown below
     (no colour is used) :   5

CLASS MARK REGISTER

Roll No.	Student Name	Marks	
		FA	SA
1.	Abcd	8	27
2.	Xyz	7	28

[Object-Oriented Programming I—C++]

10. *Either*

(a) Write a program in C++ to display the diameter, circumference and area of a circle based on the radius given by the user (Take 3 141592). 6

Or

(b) Write a program in C++ to display the odd numbers from 101 to 200. 6

11. *Either*

(a) Write the output generated by the following program in C++ : 6

```cpp
# include<iostream.h>
using namespace std;
int main()
{
    int count=1, num, sum=0;
    cout << "Enter any five integers:\n";
    while (count <=5)
    {
      cin >> num;
      sum+=num;
      count+=1;
    }
    cout << "The sum of the five integers=" <<sum<< "\n"
    return 0;
}
```

Or

(b) Debug the following C++ program to find the factorial of a number given by the user : 6

(Example : Factorial of 5 is calculated as

5! 1 2 3 4 5 120)

```cpp
# include<iostream.h>
# include <conio.h>
int main()
{
    int num, fact=1, i=1;
    cout<"Enter the number:";
    num>cin;
    if(num<0);
    {
        cout<"\nInvalid Input"
    }
    else
    {
        do
        {
            fact=fact * i+;
        } while (i<=num)
         cout<"The factorial of "<num<<" is "<fact;
    }
    getch();
}
```

[Object-Oriented Programming II—Java]

12. *Either*

(a) Write a program in Java to calculate the sum and average of a set of integer numbers given by the user. The user should be allowed to input numbers as long as he/she wants. 5

Or

(b) Write a program in Java to find whether a given alphabet is a vowel or a consonant. 5

13. *Either*

(a) Write the output generated by the following program in Java : 5

```
class Output
{
  public static void main(String[] args)
  {
      int num=20;
      for(int i=0; i<num; i++)
      {
          if (i%2==0 && i%3 !=0)
          system.out.println(i+" ");
      }
  }
}
```

Or

(b) Debug the following program to compare two numbers given by the user : 5

```
import java.util. ;
class Compare
{
  public static main(String[] args)
  {
    sc=new scanner(System.in);
    System.println("Enter the first number:");
    num1=sc.next();
    System.println("Enter the second number:");
    num2=sc.next();
    if (num1>num2)
      System.out.println(num1+"is less than"+num2);
    else if (num2>num1)
      System.out.println(num1+"is greater than"+num2);
    else
      System.out.println(num1+"is not equal to"+num2);

  }

}
```

[Societal Impacts of IT—II]

14.   *Either*

(a) Define the following terms :   2×3=6
   (i) Encryption
   (ii) Cipher and ciphertext
   (iii) Decryption

Or

(b) Write any six common symptoms of computer system infected with computer viruses. 6

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