| 2018 | III | 15 | 1100 | V – 434 | (E) |

COMPUTER SCIENCE
PAPER - I (D-9)

| Time : 3 Hours | 4 Pages | Max. Marks : 50 |

Instructions :
(1) *All questions are compulsory.*
(2) *Figure to the right indicate full mark.*
(3) *Use of any type of calculator not allowed.*
(4) *Draw a neat diagram wherever necessary.*

1. **(A)** Select the correct alternative from the following and rewrite sentence :

(a) If the page size for 2 MB memory is 2KB then the number of higher order bits on address bus used to denote page number is _____ . **1**

   (i) 11

   (ii) 10

   (iii) 9

   (iv) 8

(b) Data items are divided into sub item is called as _____ . **1**

   (i) Group Item

   (ii) Elementary Item

   (iii) Nodes

   (iv) Arrays

(c) Object is a are _____ . **1**

   (i) Variable

   (ii) Data type

   (iii) Run Time Entity

   (iv) Both (i) and (iii)

(d) In HTML, for Red colour, RGB code is _____ 1
    (i)   # 00 00 00
    (ii) # ff 00 00
    (iii) # 00 ff 00
    (iv) # 00 00 ff

(B) Answer **any two** of the following :

  (a) What is File System ? Explain tape based and disk based file system. 3

  (b) What is VDU ? Explain following terms of VDU : 3
    (i)   Dumb Terminal
    (ii) Intelligent Terminal

  (e) What is Array ? Write an algorithm for Traversing Linear Array. 3

2. (A) Answer **any two** of the following :

  (a) Define OOP. Write its features. 3

  (b) Explain <OL> and <UL> tag used in HTML with example. 3

  (c) Explain how member functions of class can be defined outside the class definition and inside class definition with example in C^{++}. 3

(B) Answer **any one** of the following :

  (a) Write the use of following file pointers with example : 4
    (i)   seekg( )
    (ii) seekp( )
    (iii) tellg( )
    (iv) tellp( )

  (b) What is GUI ? Explain the following components of GUI : 4
    (i)   Menu Bar
    (ii) Title Bar
    (iii) Scroll Bar

3. (A) Answer **any two** of the following :

  (a) Explain the following process states : 3
    (i)   Running State
    (ii) Ready State
    (iii) Blocked State

  (b) Explain Constructor and Destructor with example in C^{++}. 3

  (c) What is Data Structure ? Explain Linear Data Structure and Non-linear Data Structure. 3

(B) Answer **any one** of the following :

(a) Write any eight basic rules for virtual function that satisfies the compiler requirements. 4

(b) Define Security. Explain the different elements of security. 4

4. (A) Answer **any two** of the following :

(a) Differentiate between Traditional Procedural Programming Approach and Object Oriented Programming Approach. 3

(b) Define following Terms : 3

(i) Group Item

(ii) Elementary Item

(iii) Entity

(c) What is Binary Tree ? With suitable example show the relationship between Total Number of Nodes and Depth of Binary Tree. 3

(B) Answer **any one** of the following :

(a) What is Record ? Explain how records are represented in memory using array ? 4

(b) Explain following terms in case of Process Scheduling :

(i) Turn-around Time

(ii) Waiting Time

(iii) Terminal Response Time

(iv) Event Response Time 4

5. (A) Solve **any two** of the following :

(a) Write a C^{++} program to accept an integer number and test whether it is prime or not. 5

(b) Write a program in C^{++} using OOP technique to compute circumference of circle. 5

(c) Write HTML code for following output : 5

Cricket Analysis

Country	Played	Won	Lose
INDIA	30	27	03
PAKISTAN	30	03	27

OR

5. Solve **any two** of the following :

(a) Write a C^{++} program to find the smallest of four given integers using function min( ) that returns the smallest of four given integers. The function prototype is as below int min (int, int, int, int).   5

(b) Write an object oriented program in C^{++} to read an integer number and find the sum of digits of integer [Hind : input 125 output 8 i.e. 1+2+5=8]   5

(c) Write the output of the following HTML code :   5

```
<html>

    <body>

        <UL type = "circle">

            <li> One

            <li> Two

            <li> Three

            <UL type = "square">

                <li> Monday

                <li> Tuesday

                <li> Wednesday

            </UL>

        </UL>

    </body>

</html>
```

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