

2023

III

14

1100

V - 554

(E)

## COMPUTER SCIENCE

## PAPER - I (D-9)

Time : 3 Hours

4 Pages

Max. Marks : 50

*Instructions :* (1) All questions are compulsory.

- (2) Figures to the right indicate full marks.
- (3) Use of any type of calculator not allowed.
- (4) Draw neat diagram wherever necessary.
- (5) Header files and comments in C++ program are not necessary.

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

(a) Wastage of memory space within the partition is called as \_\_\_\_\_.

1

- (i) Internal fragmentation
- (ii) External fragmentation
- (iii) Compaction
- (iv) Segmentation

(b) Data items that are divided into subitems are called as \_\_\_\_\_.

1

- (i) Group item
- (ii) Elementry item
- (iii) Nodes
- (iv) Arrays

(c) When a member function is defined inside the class, then it is treated as \_\_\_\_\_ function.

1

- (i) Inline
- (ii) Outline
- (iii) External
- (iv) Virtual

(d) Long form of HREF is \_\_\_\_\_.

- (i) Horizontal Reference
- (ii) Hypertext Reference
- (iii) Hyperlink Reference
- (iv) Hypermedia Reference

(B) Answer any two of the following : 3

(a) Define following terms regarding data structure :

- (i) Entity
- (ii) Group item
- (iii) Elementary item

(b) What is Binary Tree ? Draw a binary tree diagram of following mathematical expression : 3

$$E = (a^2 + bc^2) / d$$

(c) Explain the use of video RAM. Explain data byte and attribute byte. 3

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

(a) Explain functions of each of following components of GUI : 3

- (i) Title bar
- (ii) Scroll bars
- (iii) Minimize and Maximize or Restore button

(b) State any six principal advantages of object oriented programming. 3

(c) Explain page memory management system with a suitable Page Map Table (PMT). 3

(B) Answer any one of following :

(a) Define following : 4

- (i) Track and Sector
- (ii) Seek time
- (iii) Transmission time
- (iv) Rotational delay

(b) Write an algorithm for bubble sort with suitable example. 4

3. (A) Answer any two of the following : 3
- (a) What is Class ? Explain general form of class declaration.
  - (b) Which are three main areas in O.S. divides it's services ? Write example of each.
  - (c) What is Computer Worm ? Explain mode of operation of computer worm.
- (B) Answer any one of the following : 4
- (a) Write any eight rules for operator overloading.
  - (b) What is Searching ? Explain binary search algorithm with example.
4. (A) Answer any two of the following : 3
- (a) What is HTML ? State it's two advantages and disadvantages.
  - (b) Differentiate between Class and Object.
  - (c) Explain following tages of html with example : 3
    - (i) <Hr>
    - (ii) <PRE>
    - (iii) <Br>
- (B) Answer any one of the following : 4
- (a) Write functions of each of followings :
    - (i) ifstream
    - (ii) ofstream
    - (iii) filebuf
    - (iv) fstream  - (b) Explain following tages of html with example : 4
    - (i) <B>
    - (ii) <UL>
    - (iii) <sup>
    - (iv) <img>

5. Answer any two of the following :
- Write a C++ program which finds fibonacci series of 'n' terms.
  - Write a C++ program to find factorial of a number during execution by using constructor function.
  - Write a html code to produce following output :

Years	Students		
	Boys	Girls	Total
2011	30	20	50
2012	45	35	80
2013	55	75	130
2014	75	95	170

Record

OR

5. Answer any two of following :

- Write a C++ program to find entered number is armstrong number OR NOT armstong.
- Implement a class average that accepts value of three float variables another function print( ) average of three numbers.
- Write the exact output of following html program code with font specifications in bracket :

```

<html>
<body>
<Table border="2">
<TR> <TD Colspan = "2">
<H1 align = "center"> HSC Board Exam </H1>
</TD> </TR>
<TR> <TD> align = "center"><u> PAPER.I </u>
</TD>
<TD align = "center"> <u>PAPER-II </u>
</TD> </TR>
<TR> <TD> <P align="center"> <i> 50 marks <ii>
</P> </TD>
<TD align = "center"> <i> 50 marks <ii>
</TD>
</TR>
</Table>
</Body>
</HTML>

```