

DAY - 16

SEAT NUMBER

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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) Elementary 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 \_\_\_\_\_ 1
- (i) Horizontal Reference
  - (ii) Hypertext Reference
  - (iii) Hyperlink Reference
  - (iv) Hypermedia Reference
- (B) Answer any two of the following :
- (a) Define following terms regarding data structure : 3
- (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 :
- (a) What is Class ? Explain general form of class declaration. 3
  - (b) Which are three main areas in O.S. divides it's services ? Write example of each. 3
  - (c) What is Computer Worm ? Explain mode of operation of computer worm. 3
- (B) Answer any one of the following :
- (a) Write any eight rules for operator overloading. 4
  - (b) What is Searching ? Explain binary search algorithm with example. 4
4. (A) Answer any two of the following :
- (a) What is HTML ? State it's two advantages and disadvantages. 3
  - (b) Differentiate between Class and Object. 3
  - (c) Explain following tages of html with example : 3
    - (i) <Hr>
    - (ii) <PRE>
    - (iii) <Br>
- (B) Answer any one of the following :
- (a) Write functions of each of followings : 4
    - (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 :

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

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 :

- (a) Write a C++ program to find entered number is armstrong number OR NOT armstrong. 5
- (b) Implement a class average that accepts value of three float variables another function print() average of three numbers. 5
- (c) Write the exact output of following html program code with font specifications in bracket : 5

```
<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 </i>
</P> </TD>
<TD align = "center"> <i> 50 marks </i>
</TD>
</TR>
</Table>
</Body>
</HTML>
```