

Date: 14.01.2020

Time: 02.30 pm to 05.30 pm

Day: Tuesday

Marks: 50

Note: 1) All questions are compulsory.

2) Figure to the right indicate full marks.

- Q.1 A) Select the correct alternatives and rewrite the following:** 04
- i) The time required for read write head to move to correct track is _____
a) Latency time b) Rotational delay c) Seek time d) None of these
- ii) Stored list is essential in _____ process of an array.
a) Linear Search b) Binary Search c) Traversing d) Insertion
- iii) A derived class with several base classes is _____ inheritance.
a) Single b) multiple c) multilevel d) hierarchical
- iv) To place the image into an HTML file _____ attribute is used in IMG tag.
a) <URL> b) <SRC> c) <ALT> d) <HREF>
- Q.1 B) Answer any TWO of the following:** 06
- i) What is virtual memory? Explain following terms with respect to virtual memory.
a) Page fault b) Dirty page
- ii) What is sorting? Explain bubble sorting algorithm.
- iii) Write any six main advantages of OOPs?
- Q.2 A) Answer any TWO of the following:** 06
- i) Explain friend function.
- ii) What is ALT attribute? Why it is used?
- iii) Explain linear search algorithm with a suitable example.
- Q.2 B) Answer any ONE of the following :** 04
- i) What is GUI? Explain components of GUI.
- ii) Explain member functions of a class can be defined outside the class definition and inside class definition with an example in C++.
- Q.3 A) Answer any TWO of the following:** 06
- i) What are types of list? Explain with the example.
- ii) Why there is necessity of overloading an operator.
- iii) What is data structure? Explain linear data structure and Non-linear data structure.
- Q.3 B) Answer any ONE of the following :** 04
- i) Explain context switching at process level in multiprogramming system with example.

ii) What is computer virus? What are the different method by which virus can infect other programs?

06

Q.4 A) Answer any *TWO* of the following:

i) Write the use of following file pointers with an example.

a) seekg()

b) seekp()

c) tellg()

ii) What is binary tree? Draw the tree structure for the following expression.
 $E = (a+b)^2 / [(c-d)+e]$

iii) How linked list are represented in memory?

04

Q.4 B) Answer any *ONE* of the following :

i) Explain the concept stack and queue data structure.

ii) Define security. Explain the different elements of security.

10

Q.5 Answer any *TWO* of the following:

a) (i) Give title to your web page as "computer science".

(ii) Include text computer science is very easy in your page.

(iii) Below that text right side of your page create hyperlink as "cs.html".

(iv) The hyperlink "cs.html" should contain scrolling text as "ALL THE BEST FOR COMPUTER SCIENCE" in bold.

b) Write a program in C++ to implement the addition and division operator for the ratio class. Hence print the given ratios x and y, their sum (x+y) and division (x/y).

c) Write HTML code for the following output.

College name: B.N. Bandodkar college of science.	
Admission data	
Streams	capacity
commerce	150
Science	100
Arts	100

OR

Q.5 Answer any *TWO* of the following:

a) Write a C++ program to accept number and test whether it is a prime number.

b) Write a C++ program to find area of circle and circumference of circle using class.

c) Write a C++ program to accept number from user and find the factorial of that number.

10

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