18CSC202J-OBJECT ORIENTED DESIGN AND PROGRAMMING
QUESTION BANK

UNIT 5
PART A (1 Mark)

1. What kind of library is Standard Template Library?

a) Polymorphic
b) Generic
c) Both Polymorphic & Generic
d) None of the mentioned

Ans:b

2. To what type of object does the container can be instantiated?

a) int
b) float
c) double
d) any type of object

Ans:d

3. What type of class template is list?

a) Class-based
b) Node-based
c) Method-based
d) None of the mentioned

Ans:b

4. What type of access does deque and vector provide?

a) Linear access
b) Parallel access
c) Random access
d) None of the mentioned

Ans:c

5. Where does the vector add the item?

a) End
b) Insert

c) Middle
d) None of the mentioned

Ans:a

6. Which are not full container classes in C++?

a) Sequence container
b) Associative container
c) Container adaptor
d) None of the mentioned

Ans:c

7. What is the lifetime of the element in container?

a) Whole program
b) Outside the block
c) Everywhere
d) Only on that container

Ans:d

8. Which operator is used to insert the data into file?

a) >>
b) <<
c) <
d) None of the mentioned
Ans:b

9. Which function is used to position back from the end of file object?

a) seekg
b) seekp
c) both seekg&seekp
d) none of the mentioned

Ans:a

10. How many objects are used for input and output to a string?

a) 1
b) 2
c) 3
d) 4
Ans:c

11. Which is used to handle the exceptions in c++?

a) catch handler

b) handler
c) exception handler
d) none of the mentioned
Ans: c

12. Which type of program is recommended to include in try block?
a) static memory allocation
b) dynamic memory allocation
c) const reference
d) pointer

Ans:b

13. Which statement is used to catch all types of exceptions?
a) catch()
b) catch(Test t)
c) catch(…)
d) none of the mentioned
Ans:c

14. How to handle error in the destructor?
a) throwing
b) terminate
c) both throwing & terminate
d) none of the mentioned
Ans:b

15. What kind of exceptions are available in c++?
a) handled
b) unhandled
c) static
d) dynamic
Ans:b

16. What do associate containers implement?
a) Arrays
b) Associative arrays
c) Functional Arrays
d) Static arrays

Ans: b

17. By using which of the following the elements in the associate container can be efficiently accessed?
a) Key

b) Position
c) Both Key & Position
d) Value

Ans: a

18. How many items are presented in the associate container?
a) 2
b) 3
c) 4
d) 5

Ans: c

19. What are the containers?
a) Containers store objects and data
b) Containers stores all the algorithms
c) Containers contain overloaded functions
d) Containers contain set of Iterators
Ans: a

20. In how many categories, containers are divided?
a) 1
b) 2
c) 3
d) 4

Ans:d

4 Marks

21.What are the Sequence Containers?
a) Containers that implements data structures which can be accessed sequentially
b) Containers that implements sorted data structures for fast search in O(logn)
c) Containers that implements unsorted(hashed) data structures for quick search in O(1)
d) Containers that implements data structures which can be accessed non-sequentially

Ans:a

22.How many Sequence Containers are provided by C++?
a) 2
b) 3
c) 4
d) 5

Ans:d

23.What are the Associative Containers?

a) Containers that implements data structures which can be accessed sequentially

b) Containers that implements sorted data structures for fast search in O(logn)

c) Containers that implements unsorted(hashed) data structures for quick search in O(1)

d) Containers that implements data structures which can be accessed non-sequentially

Ans:b

24. What are Container Adaptors?

a) Containers that implements data structures which can be accessed sequentially

b) Containers that implements sorted data structures for fast search in O(logn)

c) Containers that implements unsorted(hashed) data structures for quick search in O(1)

d) Containers that provide a different interface for sequential containers

Ans:d

25.What are Iterators?

a) Iterators are used to iterate over C-like arrays

b) Iterators are used to iterate over pointers

c) Iterators are used to point memory addresses of STL containers

d) Iterators are used to iterate over functions

Ans:c

26. How many types of Iterators are provided by C++?

a) 2

b) 3

c) 4

d) 5

Ans:d

27. Which of the following statements are correct?

a) It is not possible to combine two or more file opening mode in open() method.

b) It is possible to combine two or more file opening mode in open() method.

c) ios::in and ios::out are input and output file opening mode respectively.

Ans:a

28. Which function is used to reposition the file pointer?

a) moveg()

b) seekg()

c) changep()

d) go_p()

Ans:b

29. Where is a file temporarily stored before read or write operation in C language.?

A) Notepad
B) RAM
C) Hard disk
D) Buffer

Ans:d

30. What is the use of ios::trunc mode?

a) To open a file in input mode
b) To open a file in output mode
c) To truncate an existing file to half
d) To truncate an existing file to zero Ans:d

12 Marks

31. Merge sort

i) Merge sort uses which of the following technique to implement sorting?

a) backtracking
b) greedy algorithm
c) divide and conquer
d) dynamic programming

Ans: c

ii) What is the worst case time complexity of merge sort?

a) O(n log n)
b) $O(n^2)$
c) $O(n^2 \log n)$
d) $O(n \log n^2)$

Ans: a

iii) Which of the following method is used for sorting in merge sort?

a) merging
b) partitioning
c) selection
d) exchanging

Ans:a

iv) Which of the following is not a variant of merge sort?

a) in-place merge sort
b) bottom up merge sort
c) top down merge sort
d) linear merge sort

Answer d

32. File handling

i) Which header file is required to use file I/O operations?

a) <ifstream>

b) <ostream>

c) <fstream>

d) <iostream>

Ans:c

ii) Which of the following is used to create an output stream?

a) ofstream

b) ifstream

c) iostream

d) fsstream

Ans:a

iii) Which of the following is used to create a stream that performs both input and output operations?

a) ofstream

b) ifstream

c) iostream

d) fstream

Ans:d

iv) Which of the following is not used as a file opening mode?

a) ios::trunc

b) ios::binary

c) ios::in

d) ios::ate

Answer iv)a

33. What will be the output of the following C++ code?

i)
```
#include <iostream>
using namespace std;
int main ()
{

    char first, second;

    cout << "Enter a word: ";
    first = cin.get();
    cin.sync();
```

```
    second = cin.get();
    cout << first << endl;
    cout << second << endl;
    return 0;
}
```

a)first
b)second
c)returns first 2 letter or number from the entered word
d) third

Answer C

ii) How many objects are used for input and output to a string?

a) 1
b) 2
c) 3
d) 4

Answer c

iii) Which member function is used to determine whether the stream object is currently associated with a file?

a) is_open
b) buf
c) string
d) is_out

Answer a

iv) Which function is used to position back from the end of file object?

a) seekg
b) seekp
c) both seekg & seekp
d) seekf

Answer a

Iterators

i) How many categories of iterators are there in c++?

a) 2
b) 4
c) 5
d) 3

ii) What are Iterators?

a) STL component used to point a memory address of a container
b) STL component used for vectors

c) STL component used to call functions efficiently
d) STL component used to define template classes

iii) Which function is used increment the iterator by a particular value?
a) next()
b) advance()
c) prev()
d) move()

iv) Pick the correct statement.
a) Input iterator moves sequentially forward
b) Input iterator moves sequentially backward
c) Input iterator moves in both direction
d) Input iterator moves sequentially downwards

34. Stack
i) Consider the usual algorithm for determining whether a sequence of parentheses is balanced.
The maximum number of parentheses that appear on the stack AT ANY ONE TIME when the algorithm analyzes: (()(())(())) are:
a) 1
b) 2
c) 3
d) 4 or more

ii) Process of removing an element from stack is called _____
a) Create
b) Push
c) Evaluation
d) **Pop**

iii) Pushing an element into stack already having five elements and stack size of 5, then stack becomes
a) Overflow
b) Crash
c) Underflow
d) User flow

iv) Which of the following applications may use a stack?
a) A parentheses balancing program
b) Tracking of local variables at run time
c) Compiler Syntax Analyzer
d) **Data Transfer between two asynchronous process**

35. Associative Container
i) What do associate containers implement?
a) Arrays
b) Associative arrays

c) Functional Arrays
d) Static arrays

ii) By using which of the following the elements in the associate container can be efficiently accessed?

a) Key
b) Position
c) Both Key & Position
d) Value

iii) How many items are presented in the associate container?

a) 2
b) 3
c) 4
d) 5

iv) How many instances are allowed by map and set while inserting an element into container?

a) 1
b) 2
c) 3
d) Multiple

PART B

1. What are containers in C++ STL?
2. What are the 3 entities of STL in C++?
3. What is true about his statement in C++?

std::vector<int> vecInts(5);

4. Justify your answers Is it possible to initialize any Vector with an Array in C++?
5. Will below program run without any compilation errors? Justify your answers

Assume that all header files are included.

```
int main()
{
std::list<std::string> listOfStr;
listOfStr.push_back("1");
listOfStr.push_back("2");
listOfStr.push_back("3");
listOfStr.push_back("4");

// Initialize a vector with std::list
std::vector<std::string> vecOfStr(listOfStr.begin(),listOfStr.end());

for(std::string str : vecOfStr)
```

```
    std::cout<<str<<std::endl;
return 0;
}
```

6. How std::list is used? Explain with an example
7. Difference between Vector Vs List
8. Different Ways to Initialize a List.
9. How to erase elements from List using Iterators
10 .How to Remove Elements from a List while Iterating
11. How to get element by index in List ?
12. How to search an element in std::list ?
13. What are Lists in C++ STL? What are Enlist operators in C++?
14. What is the ifstream() method?
15. What are Derived Containers in C++ STL?
16. What is a Stream Class?
17. What are Enlist STL Algorithms?
18. List out the Components of Standard Template Library.

PART-C

1. Give syntax of and explain various functions related to ifstream and ofstream classes: seekp(), getline(),hide(),tail().
2. Explain the use of ifstream and ofstream classes for file input and output.
3. Explain the file operation functions in C++ to manipulate the position of file pointers in a random access file.
4. What is the purpose of push_back(), push_front(), pop_back() and pop_front() functions of a list.
5. What does this function do?

```
void func() {
        std::vector<std::string> vecOfString(5, "Hi");

        for (std::string str : vecOfStr)
          std::cout << str << std::endl;
}
```

6. What should be the output of below program? Assume that all header files are included.

```
int main()
{
std::list<std::string> listOfStr;
listOfStr.push_back("1");
listOfStr.push_back("2");
```

```
listOfStr.push_back("3");
listOfStr.push_back("4");

// Initialize a vector with std::list
std::vector<std::string> vecOfStr(listOfStr.begin(), listOfStr.end());

for(std::string str : vecOfStr)
   std::cout<<str;

return 0;
}
```

7. How to work with File handling in C++?
8. Write a Example Program for opening/creating a file using the open() function.
9. Explain in detain about Associative Containers: Map, Multi-map?
10. Elaborate in detail about Vector, List, Deque, Array with example program.