**Tutorial and Assignment Sheet – EVEN 2021**

**15B11CI211 – SDF-II**

**Instructions**

1. Tutorial Sheet of Week Number ‘X’ will be posted on the Google Classroom on Friday of week number ‘X-1’.

2. It will be based on topics covered in Lecture in week ‘X’.

3. Students are advised to come prepared in tutorial by revising the lectures of week ‘X’ and also by trying to attempt the tutorial sheet questions by themselves.

4. As tutorials will be problem solving based, always join the tutorial with a notebook and pen with you.

**Tutorial 2 (25th January to 30th January 2021)**

**Topics: Dynamic Memory allocation in C++, Pointer Airthmetic in C++ Q1)** which of the following is true about new when compared with malloc.

1) new is an operator, malloc is a function

2) new calls constructor, malloc doesn't

3) new returns appropriate pointer, malloc returns void \* and pointer needs to typecast to appropriate type.

a) 1 &2

b) 1 & 3

c) 2 & 3

d) All 1, 2 & 3

**Q2)** Write a C++ program to perform Insertion and deletion operation in array by creating array of marks of students in a class using dynamic memory allocation (new and delete operator).

**Q3)** WAP in C++ using new and delete operator.

The structure Node forms the linked list node. It contains the data and a pointer to the next linked list node.

The function insertNode() inserts the data into the beginning of the linked list. It creates a new\_node and inserts the number in the data field of the newNode. Then the new\_node points to the head. Finally the head is the newNode i.e. the linked list starts from there. The function display() displays the whole linked list. First temp points to head. Then it is continuously forwarded to the next node

until all the data values of the nodes are printed. deleteItem() function deletes the items from the list. In the function main(), first various values are inserted and deleted into the linked list by calling insertNode() and deleteItem(). Then the linked list is displayed.

**Q4) What will be the output of the following program?**

#include <iostream>

using namespace std;

int main()

{

int a = 32, \*ptr = &a;

char ch = 'A', &cho = ch;

cho += a;

\*ptr += ch;

cout << a << ", " << ch << endl;

return **0;**

**}**

Q5) What will be the output of the following program?

#include <iostream>

using namespace std;

int main()

{

int num[5];

int\* p;

p = num;

\*p = 10;

p++;

\*p = 20;

p = &num[2];

\*p = 30;

p = num + 3;

\*p = 40;

p = num;

\*(p + 4) = 50;

for (int i = 0; i < 5; i++)

cout << num[i] << ", ";

return 0;

}