B. Tech 3rd Semester Mid Term Examination- 2021
Subject: DATA STRUCTURES AND PROGRAMMING METHODOLOGY
(Paper Code: UCS03C14)

Time: 1 hour   Maximum Marks: 30

This exam contains 3 pages (including this page) and 12 problems.

[Section A]

*This section comprises of questions to deal with the theoretical knowledge of the subject. Please note the question paper is prepared to judge your subjective **Knowledge**, solution **Speed** and **Perfection** of answer. Total marks of each question is equally divided among sub questions.*

1. "The function *malloc()* can not return a null pointer" is a _____statement.

   [2]

2. What is the calculated value of the following prefix expression: $/ * \wedge ab - + * decfg$, where a=4, b=2, c=5, d=6, e=7, f=8, g=3.

   [2]

3. Which abstract data type can be used to represent one-to-many relations? [2]

4. Running out of memory may occur due to? [2]

5. Among the given options, which data structure may give overflow error, even though the current n elements in it is less than it's size? [2]

[Section B]

This section comprises of questions to identify the Data Structure application know how and problem solving ability. This includes concepts of programming and pseudo code understanding.

6. The following function is an example of what form of recursion?

```
1  int sdstask(int n, int k)
2  {
3    if(k==0 || n==k) return (1);
4    else return (sdstask(n-1,k)+sdstask(n-1,k-1));
5  }
```

   [2]

7. What is the purpose of the following function?

```
1  int mystery(char *s,char *t)
2  {
3    for(;*s==*t && *s!='\0';s,t);
4    return(*s-*t);
5  }
```

   [3]

8. Find the output of the following .

```c
#include<stdio.h>

int main()
{
    void demo()
    {
        printf("Hello");
    }

        printf("main()");


}
```

[3]

9. Find the output.

```c
#include<stdio.h>
int i=-4;

void f()
{
    i=321;
    i++;
}
int main()
{
    i++;
    f();
        i+=2;
    f();
    i+=3;
    f();
    printf("%d",i);
}
```

[3]

10. Find the output, assume int of 2 byte.

```c
#include<stdio.h>




void main()
{
    int a=32767;
    printf("%d",a);
    a++;
    printf("%d",a);
    ++a;
    printf("%d",a++);
    printf("%d",a);
}
```

[3]

11. Find the output, assume int of 2 byte.

```c
#include<stdio.h>

void main()
{
  unsigned int i=5;
  while(i-->=0)
    printf("%u",i);
}
```

[3]

12. Select the output.

```c
#include<stdio.h>

void main()
{
  int a=1;

  switch(a)
  {
  int k=5;
    case 1:
      printf("%d",++k);
    default:
      printf("%d",++k);
  }
}
```

[3]

This is for the student's reference

Question:	1	2	3	4	5	6	7	8	9	10	11	12	**Total**
Marks:	2	2	2	2	2	2	3	3	3	3	3	3	30
Score:													

DSPM Mid-term examination 2021(Section A, B, IIITAgartala)

Total points 25/30 ❓

Date: 4th October (2PM- 3PM)   Time : 1 hour   Full Marks : 30

Email *

suggi.aditya@gmail.com

0 of 0 points

Enter your name *

Aditya Kiran Pal

Enter your roll no *

20UCS119

Response to the questions   25 of 30 points

✓ **Question1 ***   2/2

⊙ False   ✓

○ True

✓   **Question 2 ***   2/2

○ 206

○ 207

◉ 208   ✓

○ 209

✕   **Question 3 ***   0/2

○ Tree

○ Plex

○ Graph

○ Queue

○ Linked List

◉ Other: Graph, Tree and Plex   ✕

✓   **Question 4 ***   2/2

○ Function Call

◉ Recursive function call   ✓

○ Use of more global variable

○ Declaration of multidimensional array

○ None of these

✓ Question 5 *   2/2

- ◉ Simple Queue   ✓
- ○ Circular Queue
- ○ Stack
- ○ Linked List
- ○ None of these

✓ Question 6 *   2/2

- ○ Linear Recursion
- ◉ Binary Recursion   ✓
- ○ Multiple Recursion
- ○ Mutual Recursion
- ○ Nested Recursion

✓ Question 7 *   3/3

- ○ strlen()
- ◉ strcmp()   ✓
- ○ strstr()
- ○ strchar()

✓ Question 8 *   3/3

○ HelloHello

○ Hellomain()

◉ main()   ✓

○ Error

○ Other: _____

✓ Question 9 *   3/3

○ 321

◉ 322   ✓

○ 323

○ 324

○ None of the options

✗ Question 10 *   0/3

○ 32767 32768 32769 32770

○ 32767 -32768 -32767 -32766

○ 32767 Garbage Value

◉ None of the options   ✗

✓ Question 11 *   3/3

○ 5 4 3 2 1 0

○ Infinite loop printing garbage value.

◉ Infinite loop printing valid value.   ✓

○ Compiler error

○ None of the options.

✓ Question 12 *   3/3

○ 5

○ 5 6

○ 6 7

◉ Error, No output   ✓

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