

B. Tech End Semester Examination 2018

First Semester

FUNDAMENTAL OF COMPUTERS AND INTRODUCTION TO PROGRAMMING

Time: Three Hours

MM: 100

Note:

- (i) This question paper contains five questions.
- (ii) All questions are compulsory.
- (iii) Instructions on how to attempt a question are mentioned against it.
- (iv) Total marks assigned to each question are twenty.

Q1. (Attempt any two questions of choice from a, b and c)

(2X10=20 Marks)

1a.(I). Print following pattern without using nested loop

(5 Marks)

```

1
11
121
1331
14641

```

(II). Life of a C program using a neat diagram only which consist all compilations steps and extension of files generated during these steps.

(5 Marks)

1b. (I) Explain different methods of initialization of 1-D and 2-D array.

(5 Marks)

(II) Explain role of array with its advantages and disadvantages. Also explain Array bound check and segmentation fault problem in C.

(5 Marks)

1c. Predict the output of following code: (assume 16 bits compiler)

1c(i)

3 Marks

```

int main()
{
    int x=5,y=6,z;
    z=x++;
    printf("\n%d - %d", x, z);
    z=++x;
    printf("\n%d - %d", x, z);
    z=y--;
    printf("\n%d - %d", y, z);
    z=-y;
    printf("\n%d - %d", y, z);
    z=(x++) + (y++);
    printf("\n%d - %d - %d", x, y, z);
    return 0;
}

```

1c(ii)

3 Marks

```

int main()
{
    int n;
    for(n = 7; n!=0; n--)
    {
        printf("n = %d", n--);
    }
    return 0;
}

```

```

int i,j,sum=0;
for(j=1;j<=5;j++)
for(i=1;i<=j;i++)

    sum=sum+j;
    j++;
}
printf("%d",sum);
return 0;
}

```

Q3. (Attempt any two questions of choice from a, b and c)

(2X10=20 Marks)

3a. Write notes on following with examples:

(I). Bitwise and Logical operator

(5 Marks)

(II). Ternary and relational operator

(5 Marks)

3b. Draw a flowchart and write a c program to print following pattern upto n rows:

```

*
***
*****
*****
*****

```

3c. What a c program to input 3x3 array and find the largest and the smallest elements of a particular column inputted by the user.

For Example- 11 -2 3
 -3 -6 -8
 -8 -16 -1

column index=2 maximum=3 minimum=-8

Q4. (Attempt any two questions of choice from a, b and c)

(2X10=20 Marks)

4a. Write C program for following:

(I). Program to print n terms of Fibonacci series

(5 Marks)

(II). Program to reverse element of an array without using another array

(5 Marks)

4b. Write a C Program to input n elements in the array and find the maximum, minimum, second maximum and second minimum. Also print their index in the array as that was inputted by user.

4c. Draw a flowchart to check that inputted number is perfect no. or not.(perfect no is that is equal to the sum of its proper divisor. Ex. no=6 divisor=1,2,3 (1+2+3=6))

Q5. (Attempt any two questions of choice from a, b and c)

(2X10=20 Marks)

5a. Write notes on following with examples:

(I). ROM and its type

(5 Marks)

(II). Computer network and its type

(5 Marks)

5b. Write a C Program to input user defined array and print the sum of both diagonals of elements and check that both sum are equal or not.

5c. Find location of A [3, 1] and A [2, 4] using both method (Column major method and row major method) for given integer array A.

(2.5 x 4= 10 Marks)

23 45 36

56 67 78

12 97 23

Note: Compiler is 32 bit compiler and base address of array is 2002.