Roll No. | | | | | | | |

H

TCS–201

B. Tech. (Second Semester)
End Semester EXAMINATION, 2017
(All Branches)

FUNDAMENTALS OF COMPUTER AND PROGRAMMING IN 'C' LANGUAGE

Time : Three Hours] [*Maximum Marks : 100*

Note : (i) This question paper contains *five* questions.

(ii) All questions are compulsory.

(iii) Instructions on how to attempt a question are mention against it.

(iv) Total marks assigned to each question are **twenty**.

1. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

   (a) Write a C program to check that inputted string is palindrome or not. (without using string library function).

   (b) Write short notes on the following :

   (i) rewind( )

(ii) feof( )

(iii) fread( )

(iv) fprintf( )

(v) ftell( )

(c) Write a program to accept name, age and basic salary of 5 employee and calculate the total salary of the employees as :

Total Salary = Basic + TA + DA, where TA is 15% of Basic Salary, DA is 5% of Basic Salary.

Display the information of the employees in the ascending order of their total salary.

2. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) Write short notes on the following :

(i) bit fields

(ii) enumeration

(iii) qualifier

(iv) symbolic constant

(v) typedef

(b) Write a C program to read records (Record contains marks, name, rollno) from a file and calculate grade of each student and display it :

Grade-A if marks > = 75

Grade-B if marks > = 60

Grade-C if marks > = 50

FAIL if marks > = 0

(c) Draw a flowchart to enter *n* elements in an array. Input a number *num* and check that number *num* exists in the array or not.

3. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) Write a program which passes a 1D array into a function and function should reverse the array elements by changing the location of the elements.

(b) Write a C function that searches for a character in the string and returns the number of occurrences of that character.

(c) What is dereferencing of pointer variable ? Explain how these expression will work assuming that p is a integer pointer and holding address 300 :

(i) x = * p++

(ii) p = p + 2

(iii) x = * (p + 2)

(iv) x = ++* p

4. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) Write a C program to show difference between call by value and call by reference.

(b) Write short notes on following :

(i) Compiler time initialization in 1D array 2

(ii) Array Disadvantages 3

(iii) Use of Pointer 2

(iv) Union 3

(c) Find output for the following code :

(Consider the following code for a 16-bit compiler, Ignore the punctuation error, if any and header files) :

(i) 2

```
void main( )
{
 int x = 40;
{
 int x = 20;
 printf ("%d", x);
 }
}
```

(ii) 3

```
void main( )
{
int fun (int);
int i = fun (10);
printf ("% d",– –1);
}
int fun (int i)
{
return (i ++);
}
```


(iii) 2

```
void main( )
{
int a [3] [4] = {1, 12, 3, 4, 4, 13, 2, 1, 0,
                 18, 9, 0}
printf ("%u%u", a + 1, * (a + 2) + 3);
}
{assume that array begins at 35682}
```

(iv) 3

```
void main( )
{
int x, a = 3e 1, b = 2e 2;
x = a + b;
printf ("% d", x);
}
```

5. Attempt any *two* questions of choice from (a), (b) and (c). (2×10=20 Marks)

(a) What is the difference between String and character ? Explain different string library function in detail.

(b) Write a C program to create a file named as "A.txt". Input some text from user. And now count the number of alphabets in each line and store the count of each line in another file called "Count.txt".

(c) Find output for the following code :

(Consider the following code for a 16 bit compiler, lgnore the punctuation error, if any and header files) :

(i) 2

```
int main( )
{
  char str[ ] =
  {'H','E', 'L', 'P','\0','\n', 'M', 'E','\0','\0'};
  printf ("%s\n", str);
  printf ("% d % d/ n" ,str);
  printf ("% d % d\ n", strlen (str), sizeof
                                    (str));
  return 0;
}
```

(ii) 4

```
int sum (int);
int main( )
{
   printf ("% d", sum (146));
   printf ("% d", sum (681));
}
int sum (int n)
{
      static int s;
      while (r ! = 0)
```



```
{
   s = s + n %10;
    n = n/10;
}
 return sum;
}
```

(iii) 2

```
in main( )
{
enum value = {val 1 = 0, val 2, val 3, val
                4, val 5} var;
printf ("% d", sizeof (var));
return 0;
}
```

(iv) 2

```
int main( )
{
struct emp
{
char n [20];
int age
};
struct emp e1 = {"Dravid",23};
struct map e 2 = e 1;
if (e 1 = = e2)
printf("The structure variable are
                                equal");
}
```