H

Roll No. .....

TCS–201

B. TECH. (CSE)

(SECOND SEMESTER)

MID SEMESTER

EXAMINATION, 2021-22

PROGRAMMING FOR PROBLEM SOLVING

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any *one* of the sub-questions.

(ii) Each sub-question carries 10 marks.

1. (a) (i) Given are three vectors : 10

V_1 {1, 3, 6, 7, 8, 9, 10, 12, 14, 15},

V_2 = {1, 0, 1, 0, 1, 0, 1, 0, 1, 0}

V_3 = {1, 1, 1, 1, 1, 1, 1, 1, 1, 1}.

P. T. O.

program using appropriate
to add these three vectors
ay their final sum by
g each element of the
ector by 2 to the console. 5

entence from the user and
equency of vowels present
the algorithm for the same
ment a C program us in
data types to store the
rogram must have a check
ers read i.e. should allow
habets to be processed. 5

(CO1, CO2)

both its diagonals by zero. Display the modified matrix to the console. 5

Sample input :

Enter the order : 33

Enter the elements :

55 29 77 88 11 88 54 39 99

55 29 77

88 11 88

54 39 99

Output : After swapping

0 29 0

88 0 88

0 39 0

(ii) Illustrate the concept of row-major addressing in C language using an appropriate example to store and

OR

n a function BSort( ) that sorts
BubbleSorting technique and
s the elements in ascending
Implement a C program to
t the N elements in the main
am and display the sorted
nts to the console. 5

ate the meaning of segmentation
with appropriate example. Does
ompiler have an ability of
lary checking ? Explain. 5

(CO1)

nstrate the difference between
y value and call by reference
a C program. 5

a flowchart and write a C

OR

(b) (i) "Pointers can be added and subtracted." Justify the statement with an appropriate example in C. 5

(ii) Explain the following associated with a pointer with an example for each : 5

Dangling Pointer, Wild Pointer and Void Pointer

(CO2, CO3)

4. (a) State the purpose of Dynamic Memory Allocation functions available in C with an example for each. Which header file must be included by a C program to use these functions ? When does a memory leak problem arise ? What precaution must a programmer practice to avoid it ? 10

(CO3, CO4)

are template in with appropriate
ypes for each of the attributes
oned : 5

kample :

Title : Programming in

or : E. Balagurusamy

sher : BPB

on : 2021

: ₹ 344.99

erentiate between union and
cture with an appropriate example
each. 5.

(CO3, CO4)

a C program to store N students
uch as student name, roll number,
... Accept the Rollno

OR

(b) Predict the output the following code $2\frac{1}{2}$ each

(CO3, CO4)

(i)
```
#include<stdio.h>
int main( )
{ char name [20] = "graphic";
  puts(name+3);
  puts("graphic"+2);
  return 0;
}
```

(ii)
```
#include <stdio.h>
int main( )
{ int arr[ ] = {1, 2, 3, 4, 5};
```

(iii)
```
#include <stdio.h>
int main( )
{  char str1[20] = "Hello";
   char *str2;
   str2 = str1;
   str2[4] ='O';
   *str1='O';
   printf("%s", str2);
}
```

(iv)
```
//Input String : Graphic Era
#include<stdio.h>
int main( )
{
   char name[50];
   scanf("%s", name);
   printf("%s", name);
   return 0
}
```

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