RV College of Engineering, Bengaluru-560059
(Autonomous Institution affiliated to VTU, Belagavi)
Department of Computer Science and Engineering
Model Question Paper
First Semester Autonomous Examinations

22ES14A

Fundamentals of Programming using C

Duration: 3 Hours **Max marks: 100**

Note: Answer all the questions from Part-A

Answer any 5 full questions from Part-B choosing one from each choice.(Question number 2 is compulsory)

PART-A						
Sl No		**Marks**	**CO**	**BTL**	**PO**	**PI CODE**
1.1	_____ Phase is also called construction or code generation phase.	1	1	1	1	1.6.1
1.2	C programs are converted into machine language with the help of _____.	1	1	1	1	1.6.1
1.3	The size of integer variable in C is _____.	1	1	1	1	1.6.1
1.4	Identify the program that combines object modules to form an executable program.	1	1	1	1	1.6.1

1.5	What is the output of the following code?
	#include<stdio.h>
	int main()
	{
	int a=1, b=2, c=3, d=4, e=5, res;
	res = a + b / c – d * e;
	printf("\n Result = %d", res);
	res = (a + b) / c – d * e;
	printf("\n Result = %d", res);
	res = a + (b / (c-d)) * e;
	printf("\n Result = %d", res);
	return 0;
	}
		2	2	2	2	2.5.2

1.6	What is the output of the following code?
	
	#include<stdio.h>
	int main()
	{
	int x=10, y=20, res;
	res = y++ + x++;
	res += ++y + ++x;
	printf("\n x = %d y = %d RESULT = %d", x,y, res);
		2	2	2	2	2.5.2

	return 0; }					
1.7	If an array is declared as arr[] = {1,3,5,7,9}; then what is the value of sizeof(arr[3])?	1	2	2	2	2.5.2
1.8	Differentiate loop regulating statement break from continue.	2	1	1	1	1.6.1
1.9	The memory address of the first element of an array is called _____.	1	1	1	1	1.6.1
1.10	Name the function which returns the int type value of a string passed to it.	1	1	1	1	1.6.1
1.11	What is the return value when the instruction y=strcmp("ABC","abc"); is executed?	1	2	3	2	2.5.2
1.12	The parameters passed to function are called _____ parameters.	1	1	1	1	1.6.1
1.13	The life of _____ variable declared in a function ends when the function is exited.	1	2	1	1	1.6.1
1.14	What is the use of structure?	1	2	3	2	2.5.2
1.15	What is the purpose of specifying data type for a pointer variable?	1	2	3	1	1.6.1

1.16	What is the output of the following code?
	int main()
	{
	struct tree
	{
	int h;
	int b;
	}
	struct tree tree1;
	tree1.h=10;
	printf("Height=%d, Width=%d\n",tree1.h,tree1.b);
	return 0;
	}
		2	1	3	2	2.5.2

	PART-B					
2 a.	What is the use of writing an algorithm? Explain the control structures which can be employed by algorithms with example for each.	8	1	1	1	4.1.1
b.	With a neat diagram explain the working of a Processor in a computer system.	8	1	1	1	1.7.1
3a.	Give the structure of a C program with an example.	6	1	1	1	1.7.1
b.	Give the operator precedence chart? What is associativity and precedence	6	2	1	1	1.7.1
c.	Write a program to find the largest of three numbers using ternary operator.	4	2	3	2	2.5.2
	OR					
4 a.	What do you understand by identifiers and keywords and explain its rules	6	1	1	2	2.6.3
b.	Write a program to convert degrees Fahrenheit into degree Celsius.	4	2	2	2	2.5.2
c.	Write a program to check given number is palindrome	6	3	3	2	2.5.2

<table>
<tr><td>5 a.</td><td>Write a C program to print the following output and add a note on the logic of the program.

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******</td><td>6</td><td>3</td><td>3</td><td>3</td><td>3.6.2</td></tr>
<tr><td>b.</td><td>Write a program to count the total number of nonzero elements in a two-dimensional array and add a brief note on logic.</td><td>6</td><td>3</td><td>3</td><td>3</td><td>3.7.1</td></tr>
<tr><td>c.</td><td>Identify errors, correct them in the following program, rewrite and mention the output of the corrected program.
#include<stdio>
int main([])
{
int i,c, n=4;
char vowels[5]={'a','e','i','o','u'}
for(i=n;i>=0:i- -)) {
c=(int) vowels[i]-32
printf(‘ "\t%c",c);
}
return 0;
}
}</td><td>4</td><td>2</td><td>4</td><td>2</td><td>2.8.2</td></tr>
<tr><td></td><td>OR</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>6 a.</td><td>Write a program to compute and print the electricity bill as per the rates given in the following table according to the units consumed.
<table><tr><td>Units</td><td>Rate(Rs)</td></tr><tr><td>00 and above</td><td>5.50/unit + 20</td></tr><tr><td>200-500</td><td>3.50/unit + 30</td></tr><tr><td>100-200</td><td>2.50/unit + 40</td></tr><tr><td>Less than 100</td><td>1.50/unit + 50</td></tr></table></td><td>6</td><td>3</td><td>3</td><td>4</td><td>4.5.1</td></tr>
<tr><td>b.</td><td>Write a program that reads an array of 100 integers. Then display all the pairs of elements in the array whose sum is 50.</td><td>6</td><td>2</td><td>3</td><td>3</td><td>3.6.2</td></tr>
<tr><td>c.</td><td>Compare the following code snippets and mention both are finite loops or infinite loops or both are different loops and add a note on the logic of any one code snippet.

<table><tr><td>#include<stdio.h>
int main(){
int i,j;
sectionA:
for (i=0,j=5;i<5,j>=0;i++,j--)
{
printf("%d %d",j,i);
goto sectionA;
}
}</td><td>#include<stdio.h>
int main(){
int i=0,j=5;
for (;;)
{
printf("d %d",j,i);
i++;
j--;
}
}</td></tr></table></td><td>4</td><td>2</td><td>4</td><td>2</td><td>2.7.1</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

7 a.	Illustrate any 4 standard string handling functions with examples.	8	1	2	1	1.6.1
b.	Write a C program to accept 30 names and initialize the student array.	8	3	3	2	2.5.2
	OR					
8 a.	Write functions to convert feet to inches, convert inches to centimeters, and convert centimeters to meters. Write a program that prompts a user for a measurement in feet and converts and outputs this value in meters. **Facts to use:** 1ft=12 inches, 1 inch=2.54 cm, 100cm= 1 meter.	10	2	3	1	1.6.1
b.	Using functions, write a program to generate prime numbers between given numbers.	6	2	3	1	1.6.1
9a.	Write a C program to add two complex numbers using structures.	8	2	3	1	1.6.1
b.	Explain the concept of structures within structures with the help of an example.	8	4	2	2	2.5.2
	OR					
10 a.	With the help of pointers, write a C program to add two numbers.	6	2	3	2	2.5.3
b.	Explain the concept of pass by value and pass by reference with example.	10	1	2	1	2.5.2