|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| |  | | --- | |  | |  |  | |  | | --- | |  | |
|  |  |  |  |
| **ST. JOSEPH’S UNIVERSITY, BANGALORE-27** | | | | | |
| **BSc- I SEMESTER** | | | | | |
| **SEMESTER EXAMINATION: OCTOBER 2022**  (Examination conducted in December 2022) | | | | | |
| **CS121- COMPUTER FUNDAMENTALS AND PROGRAMMING IN C** | | | | | |
|  |  |  |  |
| **Time- 2 Hrs.** | |  | **Max Marks-50** | |
|  | |  |  | |

**This question paper contains three printed pages and three parts**

Register Number:

Date:

**Part A**

**Answer all the following questions (5\*1=5)**

1. **The decimal equivalent of the octal number (645)8 is \_\_\_\_\_\_**
2. (450)10
3. (451)10
4. (421)10
5. (501)10
6. Which is valid C expression?  
   a. int my\_num = 100,000;  
   b. int my\_num = 100000;  
   c. int my num = 1000;  
   d. int $my\_num = 10000;

**3.** What is #include <stdio.h>?

1. Preprocessor directive
2. Inclusion directive
3. File inclusion directive
4. None of the mentioned

**4.** What will happen if the following C code is executed?

**#include <stdio.h>**

**int main()**

**{**

**int main = 3;**

**printf("%d", main);**

**return 0;**

**}**

* 1. It will cause a compile-time error
  2. It will cause a run-time error
  3. It will run without any error and prints 3
  4. It will experience infinite looping

**5.** What will be the output of the following C code?

**#include <stdio.h>**

**int main()**

**{**

**int a = 10, b = 10;**

**if (a = 5)**

**b--;**

**printf("%d, %d", a, b--);**

**}**

* 1. a = 10, b = 9
  2. a = 10, b = 8
  3. a = 5, b = 9
  4. a = 5, b = 8

**PART B**

**Answer any five of the following questions. (5\*3=15)**

6. Draw a flowchart and write a C program to enter a number. Find out if it is divisible by 5. If not, display the previous number which is divisible by 5.

7. Write a C Program to convert temperature in Celsius to Fahrenheit for temperature ranging from 0 to 100 for every 10 degrees.

8. Define the following terms [1\*3=3]

a. Operating System

b. Compiler

c. System Software

9. Perform the following conversions: [1.5\*2=3]

a. 864 to binary

b. 1101.10 to decimal

10. Write a C program to reverse the elements in an array.

11. Draw a flowchart to calculate the distance travelled by an object moving with initial velocity **u** and acceleration **a** in time **t.**

**Distance=ut+0.5 a t2**

12. a. What are string handling functions? Write the syntax of any three string handling functions with a suitable example.

**PART C**

**Answer any three of the following questions. (3\*10=30)**

13.a What is Sorting? Mention any 3 types of Sorting.

b. Write a program in C to sort the elements of an array in ascending order. [3+7]

14.a. Write a program to calculate the area of a circle by entering the radius.

b. Draw flowchart and write a C program to find the sum of N terms of Natural Number series (using WHILE Loop). [4+6]

15.a What are user defined functions?

b. Write a program in C using user defined function in C to find the sum of N numbers in an array [3+7]

16.a. Write a program in C to show the basic declaration of pointer.

b. Write a program in C to find the largest of three numbers using a pointer. [4+6]