	Reg. No.:	
	Name :	

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TERM END EXAMINATIONS (TEE) – December 2021- January 2022

Programme	:	**B.Tech**	Semester	:	**Fall 2021-22**
Course Name	:	**Introduction to Problem Solving and Programming**	Code	:	**CSE1021**
Faculty Name	:	**Dr. Manickavasagam B**	Slot/ Class No.	:	**E11+E12+E13 / 0087**
Time	:	**1 ½ hours**	Max. Marks	:	**50**

Answer ALL the Questions

Q. No.		**Question Description**	**Marks**

PART - A (30 Marks)

1 (a) Draw the flow chart for the given program.

```
print('Show Perfect number from 1 to 100')
n = 2
# outer while loop
while n <= 100:
   x_sum = 0
   # inner for loop
   for i in range(1, n):
      if n % i == 0:
         x_sum += i
   if x_sum == n:
      print('Perfect number:', n)
   n += 1
```

10

OR

(b) Create a Python module program that accepts two user-supplied values and returns them after applying some arithmetic operators. For instance, if the user enters the values 7 and 5, the following output will be printed:

1. 12
2. 2
3. 35
4. 1.40
5. 1
6. 2
7. 16,807

10

2 (a) Write a python that collects the employee's annual income, age, any other tax exemption details (minimum three) and find the actual taxable income, finally, print the tax amount as per income slab which was given below. **10**

Income slab	**Tax rate**
Up to Rs. 2.5 lakhs	Nil
Rs. 2.5 lakh- Rs. 5 lakhs	5.00%
Rs. 5 lakh- Rs. 7.5 lakhs	10.00%
Rs. 7.5 lakh- Rs. 10 lakhs	15.00%
Rs. 10 lakh- Rs. 12.5 lakhs	20.00%
Rs. 12.5 lakh - Rs. 15 lakhs	25.00%
Above 15 lakhs	30.00%

OR

(b) Find the Fibonacci term for a given value **10**

Example

Input : 610
Output : 610 is a Fibonacci 15 term

Input: 700
Output: 700 is lies between fibnoacci's 15 term and 16 term

3 (a) Write a program that prompts the user to enter the integer value and display the prime number series in the triangle format and use any notation to fill the whitespace in the triangle. **10**

Example:

Enter the maximum range: 190

2

3 5

7 11 13

17 19 23 29

31 37 41 43 47

53 59 61 67 71 73

79 83 89 97 101 103 107

109 113 127 131 137 139 149 151

157 163 167 173 179 181 * * *

OR

(b) Write a python program that prompts the user to enter integer values (minimum 10 inputs) for each of two lists (Eg. A and B), applies the following relational algebra among the dictionary and store the results in different tuples and print it in reverse order. **10**

c) A ∩ B

d) B – A

PART - B (20 Marks)

4 Write the python program that gets string input from users and convert the ASCII values for the characters. Find the sum of all ASCII values as a prime number or not. **10**

5 Write a python program that prints the words and their position using a dictionary.
Example:
Sample text: "As far as the laws of mathematics refer to reality they are not certain as far as they are certain they do not refer to reality"

Output:

As : 0
far : 1,15
as : 2, 14, 16
the : 3
laws : 4
of : 5
mathematics :6
refer :7,23
to :8,24
reality: 9,25
they :10,17,20
are :11
not :12,22
certain :13,19
far :15
are :18
certain:19
do :21
to :24

10

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