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| **TERM END EXAMINATIONS (TEE) – January 2021** | | | | | | | | |
| **Programme** | | | **B.Tech – Computer Science & Engineering** | | **Semester** | | **Fall 2020-2021** | |
| **Course Name** | | | **Introduction to Problem Solving and Programming** | | **Course Code** | | **CSE 1021** | |
| **Faculty Name** | | | **Dr. S. Rajasoundaran** | | **Slot / Class No** | | **D11+D12+D13/1572** | |
| **Time** | | | **1½ hours** | | **Max. Marks** | | **50** | |
| **Answer ALL the Questions** | | | | | | | | |
| **Q. No.** | **Question Description** | | | | | | | **Marks** |
| **PART - A – (3 x 10 = 30 Marks)** | | | | | | | | |
| 1 | (a) | Take a problem for printing “Happy Birthday” for 10 time for 10 different “Names”. In this scenario, do the conditions given below.   1. Check the valid dates from 1 to 10 of any month. For valid dates, print the wishes. 2. Write two algorithms using efficient and inefficient steps respectively. 3. Compare the algorithms and suggest the efficiency level of particular algorithm. (Example output: “Happy Birthday Rahul”). | | | | | | 10 |
| **OR** | | | | | | | |
| (b) | Get the play card numbers (2…10) in a list. Get a choice from play card number list as “CO\_CARD” and get a new card number as “PUT\_CARD”. If the value of PUT\_CARD is higher than CO\_CARD, make the CO\_CARD value as PUT\_CARD. Print both card numbers. Implement a python code, algorithm and flowchart. | | | | | | 10 |
| 2 | (a) | Compute the following base conversions.   1. Convert the decimal number “124” in to binary and octal base numbers manually. Write the complete mathematical procedures for each conversion. 2. Implement a python program for converting the hexadecimal number “EF” in to octal base number. Write the sample output. | | | | | | 10 |
| **OR** | | | | | | | |
| (b) | Create a list (different data types) for keeping the 15 elements. Initiate replicated elements in to the list. Implement a python code for finding the occurrences of given element. In addition, write a pseudo code for the same problem. Also, state your opinion about the element replications inside dictionary structure. | | | | | | 10 |
| 3 | (a) | Implement the python program with suitable inputs and outputs - Create a tuple of commercial products (Pen, Rice, Soap, etc.) and a list of product prices (Rupees).   1. Convert the tuple in to list and include new product prices and product names. 2. Remove the product “Pencil” from list and print “Sold Out”. 3. Find any one product as a new one to print “New Arrival”. | | | | | | 10 |
| **OR** | | | | | | | |
| (b) | Do the following tasks.   1. Implement the python code to find the square root of given number “N” using inbuilt function and factorization. Let the N=81 to implement the problem. 2. In addition, give the square root value (previous program output) to Fibonacci series as input. Find the Fibonacci series output. | | | | | | 10 |
| **Part - B – (2 x 10 = 20 Marks)** | | | | | | | | |
| 4 | | State the following with example.   1. Differentiate compiler and interpreter 2. Function with argument and without return type 3. Purpose of using bitwise right shift and left shit operators 4. Compute, X=9-12/3+3\*2-1 | | | | | | 10 |
| 5 | | Differentiate Arrays, Tuples and Lists. Give the syntax of array declaration and list declaration. In this concern, create two 1-Dimensional arrays and two lists. Then implement the python code for the tasks illustrated below.   1. Concatenate the elements of arrays 2. Concatenate the elements of lists 3. Compare the particular element of array and list. Print the result. 4. Display the array elements and list elements | | | | | | 10 |
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