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| | Reg. No.: | |
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TERM END EXAMINATIONS (TEE) – December 2021- January 2022

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| Programme | : B.Tech. | Semester | : Fall 2021-22 |
| Course Name | : Introduction to problem Solving and Programming | Course Code | : CSE1021 |
| Faculty Name | : Dr. Vikas Panthi | Slot / Class No | : A11+A12+A13 / 0078 |
| Time | : 1½ hours | Max. Marks | : 50 |

Answer ALL the Questions

| Q.No. | Question Description | Marks |
|-------|---|-------|
| 1 | (a) Many people keep time using a 24 hour clock (11 is 11am and 23 is 11pm, 0 is midnight). If it is currently 13 and you set your alarm to go off in 50 hours, it will be 15 (3pm). Write an algorithm and flowchart with Python program to solve the general version of the above problem. Ask the user for the time now (in hours), and then ask for the number of hours to wait for the alarm. Your program should output what the time will be on a 24 hour clock when the alarm goes off. | 10 |
| | OR | |
| 2 | (b) With the help of a suitable example differentiate the following function prototypes: a) function with arguments and without return type b) function without arguments and with return type | 10 |
| | OR | |
| 2 | (a) Write a python program to swap two numbers: a) without using third variable b) without using third variable and without using arithmetic operator Programs should take inputs from user. Output must display messages before and after swapping. Printed statements should be like: “ Numbers before swapping X =... and Y = ... ” “ Numbers after swapping X =... and Y = ... ” Make use of “format ()” in the print statement to display the message. | 10 |
| | OR | |
| (b) | Write a python program to find the square root of a number in two different ways: 1)without using any inbuilt function 2) by using Math library function. In both, program should ask to enter the number for which square root is required. The output should display the message: “ The square root of the given number ... is: ... ”. Make use of “format ()” in the print statement to display the message. | 10 |

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| 3 | (a) Among the given methods determine whether they are used with List or Dictionary, Also, show their use with an example: <table border="1" data-bbox="457 226 1177 340" style="margin-left: auto; margin-right: auto;"> <tr> <td>a) append()</td> <td>b) insert()</td> </tr> <tr> <td>c) setdefault()</td> <td>d) fromkeys()</td> </tr> <tr> <td>e) pop(argument)</td> <td></td> </tr> </table> | a) append() | b) insert() | c) setdefault() | d) fromkeys() | e) pop(argument) | | 10 |
| a) append() | b) insert() | | | | | | | |
| c) setdefault() | d) fromkeys() | | | | | | | |
| e) pop(argument) | | | | | | | | |
| OR | | | | | | | | |
| | (b) Write a python program to print Fibonacci series up to n-terms and find n th Fibonacci Number using dynamic programming with space optimization. Program should ask to input the number up to which Fibonacci series and number is required to be printed. The output should be displayed with these two messages: “This is the Fibonacci Series up to n-terms” and “... is the n th Fibonacci number”. Make use of “%” with the second print statement to display the message. | 10 | | | | | | |
| 4 | Perform the following base conversions: <table border="1" data-bbox="457 697 1177 810" style="margin-left: auto; margin-right: auto;"> <tr> <td>f) $(4E4)_H = (?)_D$</td> <td>g) $(101100111)_B = (?)_D$</td> </tr> <tr> <td>h) $(269)_D = (?)_O$</td> <td>i) $(5614)_D = (?)_B$</td> </tr> <tr> <td>j) $(1672)_O = (?)_D$</td> <td></td> </tr> </table> | f) $(4E4)_H = (?)_D$ | g) $(101100111)_B = (?)_D$ | h) $(269)_D = (?)_O$ | i) $(5614)_D = (?)_B$ | j) $(1672)_O = (?)_D$ | | 10 |
| f) $(4E4)_H = (?)_D$ | g) $(101100111)_B = (?)_D$ | | | | | | | |
| h) $(269)_D = (?)_O$ | i) $(5614)_D = (?)_B$ | | | | | | | |
| j) $(1672)_O = (?)_D$ | | | | | | | | |
| 5 | List and explain different Set Operations using Venn Diagram: Union, Intersection, Difference and Symmetric Difference. Also, give python syntax for all the “Set Operation Methods” and outputs, if, you have following two sets. Data-X = set(['A', 'R', 'B', 'C', 'V', 'K']) Data-Y = set(['A', 'D', 'C', 'Q', 'R', 'J']) | 10 | | | | | | |
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