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Question Paper Code : U1208

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

First Semester

Civil Engineering

21UCS108- PROBLEM SOLVING AND PYTHON PROGRAMMING

(Common to ALL branches)

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

- Which of the following is used to translate a program written in a high-level language into its equivalent machine code line by line? CO1- R
(a) Loader (b) Compiler (c) Linker (d) Interpreter
- What is the output of the following statement? CO2- App
`round(1.5) – round (-1.5)`
(a) 4 (b)3 (c)2 (d)1
- Which of the following is equivalent to `s[:-1]` CO3-U
(a) `s[:len(s)]` (b) `s[len(s):]` (c) `s[::]` (d) `S[:-1]`
- A variable defined outside a function is referred to as CO4- R
(a) Local variable (b) Only Variable (c) Global Variable (d) Private Variabe
- What will be the output of the following code? CO5- App
`a=((1,2,))*7`
`Print(len(a[3:6]))`
(a) 2 (b) 4 (c) 3 (d) Error

PART – B (5 x 3= 15 Marks)

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| 6. | List the types of software with examples. | CO1- U |
| 7. | State the structure of a Python program. | CO2- U |
| 8. | Develop a Python program to print the sum of N numbers. | CO3- App |
| 9. | Define Lambda function with an example. | CO4- U |
| 10. | Outline Tuples with examples. | CO5- U |

PART – C (5 x 16= 80 Marks)

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| 11. | (a) | (i) Draw a flow chart to print the first 'n' prime numbers. | CO1- U | (8) |
| | | (ii) Write an algorithm to find the greatest among three numbers. | CO1- U | (8) |

Or

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| | (b) | Summarize the basic organization of computers with a neat diagram. | CO1- U | (16) |
| 12. | (a) | Outline the various Operators and Expressions in Python with examples. | CO2- U | (16) |

Or

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| | (b) | (i) Develop a Python program to read the radius of a circle and print the area of the circle. | CO2- U | (8) |
| | | (ii) Develop a Python program to read the marks of 5 subjects through the keyboard. Find out the aggregate and percentage of marks obtained by the student. Assume maximum marks that can be obtained by a student in each subject as 100. | CO2- U | (8) |
| 13. | (a) | (i) Develop a Python program to calculate the sum of numbers from 1 to 20 which are not divisible by 2, 3 or 5. | CO3- App | (8) |
| | | (ii) Develop a Python program to using the while loop, which prints the sum of every fifth number from 0 to 500. | CO3- App | (8) |

Or

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| | (b) | (i) Illustrate the break and continue statements with examples. | CO3- App | (8) |
| | | (ii) Outline the operation of while loop with an example. | CO3- App | (8) |

14. (a) Outline parameters and arguments in functions with examples. CO4- App (16)

Or

(b) Develop a Python function `eval_Quadratic_Equa (a,b,c,x)` which returns the value of any quadratic equation of the form $ax^2 + bx + c$. CO4- App (16)

15. (a) Demonstrate with code the various operations that can be performed on lists. CO5- U (16)

Or

(b) Outline the operations on dynamically manipulating dictionaries. CO5- U (16)

