Total No. of Questions : 10]

SEAT No. :

PD-5300

[Total No. of Pages : 3

[6401]-2410
F.E. (BOS-IT)
(PCC-151-ITT): Programming and Problem Solving
(2024 Credit Pattern) (Semester - I/II)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidate:

1) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Assume suitable data if necessary.*

Q1) a) What are the types of problems? Explain in detail. [3]

b) Explain brief history of python programming language and list different software developed in python. [3]

c) Describe object oriented programming features. [4]

d) Define problem solving. Write down steps of problem solving process. [4]

OR

Q2) a) Describe flowchart and symbols in detail. [3]

b) Write down the applications of python programming languages. [3]

c) Explain the python programming features. [4]

d) Describe TOP-DOWN design approach in detail. [4]

P.T.O.

https://www.sppuonline.com

Q3) a) List down all the advanced data types in python & Explain any two [3]

b) Describe the following terms with examples (any three) [3]

i) break ii) continue iii) pass iv) range

c) Implement a program in python to check whether a number entered by user is positive, negative, or zero [4]

d) Explain decision control statements in python in detail [4]

OR

Q4) a) Explain different arithmetic operators with suitable example [3]

b) Write down the difference between for loop and while loop [3]

c) Develop a python program to check whether a given number is even or odd [4]

d) What is the dictionary data type? Explain any 3 operations of the dictionary data type. [4]

Q5) a) Compare Regular functions and lambda functions in python with suitable examples. [4]

b) Describe the use of the return statement in functions with example. [5]

c) Develop an algorithm & program to concatenate two strings using + operator. [5]

OR

Q6) a) Analyze the difference between ord ( ) and chr ( ) functions with examples. [4]

b) Explain the concepts of variable scope (local and global) and lifetime in python with suitable code examples [5]

c) Implement program to reverse a string using user defined function. [5]

https://www.sppuonline.com

Q7) a) Describe the purpose & use of file handling. [4]

b) Differentiate between mutable and immutable data types with focus on dictionaries in python. Provide examples. [5]

c) Implement a program to append data to an already existing file. [5]

OR

Q8) a) Explain different types of files in detail [4]

b) Explain key directory methods: mkdir ( ), rmdir ( ) listdir ( ), and chdir ( ) with syntax and usage example. [5]

c) Develop a program to print the absolute path of a file using OS. path. join. [5]

Q9) a) Differentiate between class variables and object variables with an example. [4]

b) Analyze the significance of garbage collection in python how does python handle object destruction? [5]

c) Describe classes and objects in detail. [5]

OR

Q10) a) Explain the role of __ init __ ( ) and __ del __ ( ) methods in object lifecycle. [4]

b) Distinguish between public and private members of a class with proper examples. [5]

c) Describe data abstraction & Encapsulation in detail [5]

https://www.sppuonline.com