

CBCS SCHEME

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18EC646

Sixth Semester B.E. Degree Examination, Dec.2024/Jan.2025 Python Application Programming

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain the concept of type conversion functions, math functions, Fruitful and void factions in python with examples. (10 Marks)
- b. Predict the output and justify your answer for the following operations
i) $11\%9$ ii) $7.7//7$ iii) $(200 - 70)*10/5$ iv) not 'False' v) $5*2**2$. (10 Marks)

OR

- 2 a. Write a program to prompt for a score between 0.0 and 1.0. If the score is out of range, print an error message. If score is between 0.0 and 1.0, print a grade using the following table :
> = 0.9 : A
> = 0.8 : B
> = 0.7 : C
> = 0.6 : D
> = 0.6 : F (10 Marks)
- b. Differentiate compiler and interpreter. (06 Marks)
- c. List the building blocks of program and explain each them. (04 Marks)

Module-2

- 3 a. List any five string methods of python and explain each of them with an example. (10 Marks)
- b. Predict the output and justify your answer for the following python program.
def fun (a, b, c) :
Z = [0, 0, 0, 0, 0, 0, 0, 0, 0, 0]
for i in range (len (a)) :
z[i] = C* a[i] + b
return (z)
d = 2
e = [2, 5, 6, 8, 10, 15, 4, 3, 1,9]
f = 3
y = fun (e, d, f)
print ('y=' y)
print ('Extract='y[$\text{len}(e) - 3$:]) (10 Marks)

OR

- 4 a. Write a program which repeatedly reads numbers until user enters "done". Once "done" is entered, print out the total, count and average of the numbers. If the user enters anything other than a number, detect their mistake using try and except and print an error message and skip to the next number. (10 Marks)

- b. List python functions used for file handling and explain each of them with examples.

(10 Marks)

Module-3

- 5 a. For a given list T which contains the alphabets from 'a' to 'j', write a function called chop that takes a list T and modifies it, removing the first and last elements, and return None. Then write a function called middle that takes a list T and returns a new list that contains all excluding the first and last elements. Finally call these two function in the main program and print the return values. (07 Marks)
- b. What is a list? Explain the concept of list slicing and list traversing with examples. (06 Marks)
- c. Write a python program to read the string build a histogram using a dictionary to count occurrence of characters in a string and print the dictionary. (07 Marks)

OR

- 6 a. Applying the concept of Dictionaries and Tuples, write a python program which reads the file and computes the count of words present in the file and print the ten most common words in the file. (10 Marks)
- b. Applying the concept of regular expression write a python program to search for lines that start with 'F' followed by 2 characters, followed by 'm:' and search for lines that having '@' sign between characters, the characters must be letter or number. (10 Marks)

Module-4

- 7 a. What is a Class? How to define a class in python? How to instantiate a class and how the class members are accessed? (10 Marks)
- b. Write a definition for class named circle with attributes center and radius, where center is point object and radius is a number. Instantiate a circle object that represent a circle with its center at (150, 100) and radius 75. Write a function named point – in – circle that takes a circle and a point and returns true if the point lies in or on boundary of the circle. (10 Marks)

OR

- 8 a. Show using a python code how `__init__` method is involved when an object is initiated. Explain its working. (10 Marks)
- b. What is types based dispatch? Write an add method for Time that works with either a Time object or an integer value. If the second operand is a Time, the method should invoke the add-time function to add the time value, if the second operand is a integer value the method should invoke the increment function to increment time by integer value and print the corresponding output. (10 Marks)

Module-5

- 9 a. Demonstrate with the help of python construct how to retrieve an image over HTTP and web pages with urllib. (10 Marks)
- b. Brief on structured query language, with suitable python program, explain functions involved in creation of database table in python. (10 Marks)

OR

- 10 a. Illustrate the concept of parsing JSON and parsing XML with python code. (08 Marks)
- b. Compare and contrast the JavaScript Object Notation (JSON) and XML. (04 Marks)
- c. Explain with python code, the concept of using JOIN to retrieve data in python. (08 Marks)