## 5 SEM TDC DSE CAP (CBCS) 1 (A/B) (NH)

# 2024

( November )

## COMPUTER APPLICATION

( Discipline Specific Elective )

( For Non-Honours )

Paper : DSE–1

*Full Marks* : 80

*Pass Marks* : 32

*Time* : 3 hours

*The figures in the margin indicate full marks
for the questions*

Paper : DSE–1(A)

**( Programming with Python )**

1. Answer the following as directed :  1×5=5

   *(a)* To prompt the user for an input, _____
   function is used in Python.

   ( Fill in the blank )

   *(b)* What is an algorithm?

*( Turn Over )*

## ( 2 )

(c) It is necessary that every if statement should have an else block.

( State True or False )

(d) Define LIST.

(e) A tuple can be sliced.

( State True or False )

**2.** Answer the following questions : 3×5=15

(a) What is a decision table, and how can it be used to simplify complex decision-making processes?

(b) Write the differences between syntax error and logical error.

(c) Explain the use of the break statement with the help of an example.

(d) Write a Python program to swap two numbers using a temporary variable.

(e) Write the advantages of bottom-up programming paradigm.

**3.** Answer any six of the following : 10×6=60

(a) Explain different types of decision control structures in Python with examples. Write a Python program that takes an integer input from the user and determines whether the number is positive, negative or zero. 5+5=10

## ( 3 )

(b) Describe the relational, logical and bitwise operators in Python with examples.

(c) Explain the use of conditional statements in Python with examples. Write a Python program that accepts three numbers from the user and determines the largest among them. 5+5=10

(d) Discuss the importance of functions in Python programming. Write a function that takes an integer 'n' as input and calculate the value of the following : 4+6=10

$$S = 1 + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!} + \cdots + \frac{1}{n!}$$

(e) Explain the key features of LIST in Python. Write a Python program to find the sum of all even numbers in a list. 4+6=10

(f) Write a Python program to explain the differences between class variables and instance variables.

(g) Write a Python program to perform bubble sort.

## ( 4 )

Paper : DSE–1(B)

( Visual Programming )

1. Answer briefly the following :       2×8=16

   (a) Write two common differences between procedural programming and object-oriented programming.

   (b) What is the difference between drop-down menu and pop-up menu?

   (c) Explain the concept of debugging.

   (d) How do functions differ from procedures? Explain.

   (e) What are the basic uses of MySQL?

   (f) What is dimension of an array?

   (g) Define searching.

   (h) Distinguish between Pass-by-reference and Pass-by-value.

2. Write short notes on (any six) :       4×6=24

   (a) Message box

   (b) Common dialog box

   (c) Database

   (d) Image control

## ( 5 )

   (e) Python as a programming language

   (f) Looping and Branching in a program

   (g) Designing of user interface

3. Answer the following :       8×5=40

   (a) Explain various data types supported in visual programming.

   (b) What are list boxes and combo boxes? Differentiate them. Illustrate them with coding to add and remove items in list and combo boxes.

   (c) Write a Visual Basic Program to read N numbers and count of positive numbers and negative numbers in the list, using a single dimension array.

   (d) (i) What are modules? Explain different types of modules.

       (ii) What is Case structure? What are the different data types supported by case structure?

   (e) What is looping in a program? Describe with example about different looping structures used in Visual Basic.

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