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Hi-Tech Institute of Engineering & Technology
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
MODEL TEST PAPER
PYTHON PROGRAMMING

Time: 3 Hours   *Total Marks: 70*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   **Attempt *all* questions in brief.**   **2 x 7 = 14**

a.	What is data frame in pandas?
b.	Explain features of any two python IDEs.
c.	Discuss the purpose of the break and continue statement in loops.

d.	Explain the output of the following function.
	  def printalpha(abc_list, num_list) :
	      for char in abc_list :
	          for num in num_list :
	              print(char, num)
	      return
	  printalpha['a', 'b', 'c'], [1,2,3]

e.	Differentiate between package and module.
f.	Differentiate between Python arrays and lists ?
g.	Discuss why python is called as dynamic and strongly typed language ?

SECTION B

2.   **Attempt any *three* of the following:**   **7 x 3 = 21**

a.	Develop a program to calculate the reverse of any entered number.
b.	Discuss file I/O in python. How to perform open, read, write, and close into a file? Write a Python program to read a file line by line store it into a variable
c.	What is use of __init__.py in python? List various steps to create a package in python.
d.	Explain the list comprehension with any suitable example. Explain various inbuilt methods of list.
e.	Explain dictionary and Boolean data type.How do you declare numeric data type in python?

SECTION C

3.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

(a)	Write and explain an algorithm through python code to generate prime numbers.
(b)	Explain the purpose and working of loops. Discuss break and continue with example. Write a Python program to convert time from 12 hour to 24 hour format.

4.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

(a)	Write a python function, searchMany(s,x,k), that takes as argument a sequence s and integer x, k (k>0). The function return True if there are at most k occurrences of x in s. Otherwise it return False. For example :
	    searchMany([10,17,15,12],15,1) returns True
	    searchMany([10,12,12,12],12,2) returns False
	    searchMany([10,12,15,11],17,18) returns True.

(b)	Write a program that accepts a sentence and calculate the number of digits, uppercase and lowercase letters.

5. Attempt any *one* part of the following: 7 x 1 = 7

(a)	Describe the difference between Import library and from library import * When used in a python program. Here library is some Python library.
(b)	Write short notes with example : The programming cycle for Python, type conversion in Python, operator precedence, and Boolean expression.

6. Attempt any *one* part of the following: 7 x 1 = 7

(a)	Explain the term operator. Define Identity and membership operator with example.
(b)	What do you mean by data types? Explain numeric and string data type bwith example.

7. Attempt any *one* part of the following: 7 x 1 = 7

(a)	What is the purpose of manipulation the file pointer using seek() function and How can you use seek() function to reset the write position relative to current position
(b)	How does the 'whence' parameter affect to positioning of the file pointer using seek() ?