Reg No.:_____   Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S1,S2(S,FE) Examination May 2021 (2015 Scheme)

Course Code: **BE101-05**
Course Name: INTRODUCTION TO COMPUTING AND PROBLEM SOLVING

Max. Marks: 100   Duration: 3 Hours

PART A

Answer all Questions.   Marks

1	Differentiate between Hardware and Software.	(2)
2	Define an Operating system (OS). Mention any four functions of OS.	(3)
3	Explain the concept of top down design for solving a problem	(3)
4	Which are the symbols used in flow chart and mention the functions of each?	(3)
5	Show the python code for: Input a, b, n. Print numbers from 1 to n divisible by both a and b.	(3)
6	Describe the different ways of usage of python interpreter.	(2)
7	List the rules for declaring variables in python	(2)
8	Give the logical operators in python with example?	(2)
9	What is the difference between type conversion and type coercion? Explain with examples.	(2)
10	Write a python program to print the series 1, 3, 4, 7, 11, 18...…	(2)
11	Explain any two dictionary operations in Python. Give examples.	(2)
12	Compare list and tuples in python	(2)
13	Write a python code to reverse a given string without using reverse() function.	(3)
14	What is pickling? Illustrate with example.	(3)
15	With example explain the different file operations in python?	(3)
16	Compare class and object. Generate a class to represent a rectangle.	(3)

PART B

Answer any four questions. Each question carries 8 Marks

17	a)	What is machine language? Give its advantages and disadvantages?	(6)
	b)	Compare RAM and ROM	(2)
18	a)	Draw a flow chart to print N Fibonacci numbers. N is given.	(4)
	b)	Write an algorithm to generate all prime numbers up to a given number N.	(4)

19 a) Write a python program to reverse a number and also find the sum of digits of the number. Prompt the user for input (4)

b) Write a python code to display multiplication tables from 1 to a given number N (4)

20 a) Find nCr = n!/ r!(n-r)! Use recursive functions. (n and r are given) (4)

b) Illustrate with example any three control statements in python (4)

21 a) Write a menu driven python program to implement a calculator. (With basic arithmetic functions calculate square and square roots also) (6)

b) Demonstrate with examples the usage of user defined functions in python. (2)

PART C

Answer any two full questions. Each carries 14 Marks

22 a) Input two 2×2 matrices A,B. Find 2A+B. Use list in python (7)

b) Explain with examples any three dictionary operations in Python. (7)

Write a Python program to create a dictionary of names and marks of five students. Display the names in the dictionary in the decreasing order of marks.

23 Write a Python program to input a sentence and perform the following operations. (14)

  i) Find the number of words and characters in the sentence (3)

  ii) Reverse each word in the sentence and save the new sentence to a file (5)

  iii) Capitalize first letter of each word and store the words in a list (6)

24 a) What is object-oriented programming? Write a Python class named Circle constructed by a radius and two methods which will compute the area and the perimeter of a given circle. (12)

b) How exceptions are handled in python? (2)

****