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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIRST SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019
Course Code: BE101-05
Course Name: INTRODUCTION TO COMPUTING AND PROBLEM SOLVING
Max. Marks: 100   Duration: 3 Hours
PART A
Answer all questions, each carries2 or 3 marks.   Marks

1	Differentiate system software and application software.	(3)
2	Give the roles of PC, IR and MAR.	(3)
3	What are the properties of a good algorithm?	(3)
4	Draw a flowchart to find area of a triangle.	(3)
5	Write the syntax of chained conditional statement. Explain with an example.	(3)

6   Give the output for the following program segment:

```
for c in "PYTHON":
    print (c)
else:
    print ("Done")
```
(3)

What will be the output if print (c) is followed by a break statement in the for loop?

7	Write a Python program using function to convert an integer to a string.	(3)
8	How will you use sqrt() and log() functions in your program. Explain with an example.	(3)
9	Write a program to check if the word 'orange' is present in the string "This is orange juice".	(2)
10	For the dictionary given below, identify the key-value pairs. Also give the Python statements to print keys and values of the dictionary separately. Dict=['name':'john','age':25,'salary': 28000]	(3)

11   Consider the list scores = [5, 4, 7, 3, 6, 2, 1] and write the Python code to perform the following operations:
    i)   Insert an element 9 at the beginning of the list.
    ii)   Insert an element 8 at the index position 3 of the list.   (3)
    iii)   Delete an element at the index position 4.

12   Predict the output. Justify your answer
        A=20
        B=0
        C=A/B   (2)
        print C

13	Explain any three inbuilt exceptions.	(3)

14	Differentiate between shallow equality and deep equality.	(3)

PART B
Answer any four full questions, each carries8 marks.

15	What is a bus? Give the different types of buses. With a diagram show the interaction between CPU, memory and peripheral devices.	(8)
16	Formulate an algorithm and draw a flowchart to generate Fibonacci series upto n terms	(8)
17	Using compound Boolean expression write a Python program to print the numbers which are divisible by 7 and multiples of 5 between m and n where m and n are positive integers.	(8)
18	What is recursion? Write a python program to calculate nCr. Use a recursive function *fact( )* to find the factorial of a number.[nCr=n!/(r! x (n-r)!)]	(8)
19	Write a Python program to print the following output:	(8)

```
    *
   *   *
  *   *   *
   *   *
    *
```

PART C
Answer any two full questions, each carries14 marks.

20	a)	Write a menu driven Python program to read a string and perform the following string operations:	
		(i) Slice the string to two separate strings; one with all the characters in the odd indices and one with all characters in even indices.	
		(ii) Replace all the spaces in the input string with * or if no spaces found, put $ at the start and end of the string.	(7)
	b)	Explain any four file functions in Python with example.	(4)
		Explain how runtime errors are handled in python.	(3)
21	a)	Explain any three dictionary operations in Python. Give examples.	
		Write a Python program to create a dictionary of roll numbers and names of five students. Display the names in the dictionary in alphabetical order.	(7)
	b)	Write a Python program to read a number and check for prime. If not, raise an arithmetic error to display as not prime.	(7)
22	a)	Write a Python program to read a list consisting of integers, floating point numbers and strings. Separate them into different lists depending on the data	(7)

type.

b) Write a Python program to read a text file and display all the palindromes in the file.   (7)

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