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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 carries 2 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")
What will be the output if print (c) is followed by a break statement in the for loop? | (3) |
| 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.
iii) Delete an element at the index position 4. | (3) |
| 12 | Predict the output. Justify your answer
A=20
B=0
C=A/B
print C | (2) |
| 13 | Explain any three inbuilt exceptions. | (3) |

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

PART B

Answer any four full questions, each carries 8 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. [$nCr = n! / (r! \times (n-r)!)$] (8)
- 19 Write a Python program to print the following output:

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

(8)

PART C

Answer any two full questions, each carries 14 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. (7)
- 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.
- 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)
