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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FIRST SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2017

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	What is the purpose of a translator? Explain the different types of translators.	(3)
2	Write an algorithm for finding the largest and smallest of N numbers.	(3)
3	What do you mean by cache memory?	(2)
4	Draw the flowchart for finding the sum of all even numbers between 1 and N	(3)
5	Identify all the invalid variable names from the following. Also give the reason (i) 2sum (ii) _sum@ (iii) for (iv) fori	(2)
6	What will be the output of the following expressions in python i) 2*3**2 ii) 2**3**2	(2)
7	Write a python function that will accept three arguments x , y and z. Find x+y and if the sum is greater than z, return the square root of (x^2+y^2). Otherwise return -1	(3)
8	What is the difference between type conversion and type coercion? Explain with example.	(3)
9	What will be the output of the following code **for** number **in** range(30,20,-2): number = number + 5 print number	(3)
10	Suppose S="*mary had a little lamb*". Write the python code to i) Replace "*lamb*" with "*kid*" ii) Find starting index of substring "*had*" in the string S .	(2)
11	Let data=[23,56,67,2,[6,7,12],123]. Write the expressions for following operations in Python: i) Replace the value 67 with 89 ii) Print the value 12. iii) Remove the value 56 from list.	(3)
12	Let t=('a','b','c',1,2,3). Write a python code to print the values in reverse order.	(2)
13	How can you create a fresh copy of a dictionary? Explain with example.	(2)
14	What is the advantage of using pickling? Explain the "dump" and "load" methods associated with it.	(3)
15	Explain with example the difference between read() and readline() functions associated with files in python.	(2)
16	Describe the different modes used for file operations.	(2)

PART B

Answer any four full questions, each carries 8 marks.

17 a) What are the different types of RAM? Give brief explanation. (4)

b) Design an algorithm for generating the following series (4)
(1, 3, 4, 7, 11, ...)

18 a) Explain the instruction cycle of a CPU with a neat diagram. (4)

b) Draw a flowchart for finding sum of the digits of a number, N. (4)

19 a) Describe recursion with one example. (4)

b) What is a system software? Explain its uses with examples. (4)

20 Write a python program to find the sum of cosine series ($1-x^2/2!+x^4/4!-x^6/6!$.....N terms). Use a function *fact* to find the factorial of a number. (8)

21 a) Write a Python program to calculate the hypotenuse of a right-angled triangle. (2)

b) Explain the logical operators in python with example? (3)

c) Write Python code to check whether a number is prime or not. (3)

PART C

Answer any two full questions, each carries 14 marks.

22 a) Write a python program to input a sentence and find the number of words in the sentence and print each word in uppercase. Also print the number of question marks (?), periods(.) and commas(,) present in the string. (7)

b) Write a Python program to input a list of n numbers. Calculate and display the sum of cubes of each value in the list. (5)

c) What are the operations associated with a list? Explain with examples. (2)

23 a) What is the difference between a list and a tuple? (3)

b) Describe the exceptions in python with examples. (4)

c) Explain the data structure, dictionary in Python using an example. How does the Dictionary operations- "del" , "len" , "keys ", "items" and "has_key" operations work. Explain with examples. (7)

24 a) Write a Python program to read numbers from a file named, *num.txt*. Write all positive numbers from *num.txt* to file named *positive.txt* and all negative numbers to another file named *negative.txt*. (7)

b) Explain the terms class, object and attributes. Create a class Employee with attributes name, age and salary. Write a method *printdetails()* for displaying the same. Create two instances of the class and call the method for each instance. (7)

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