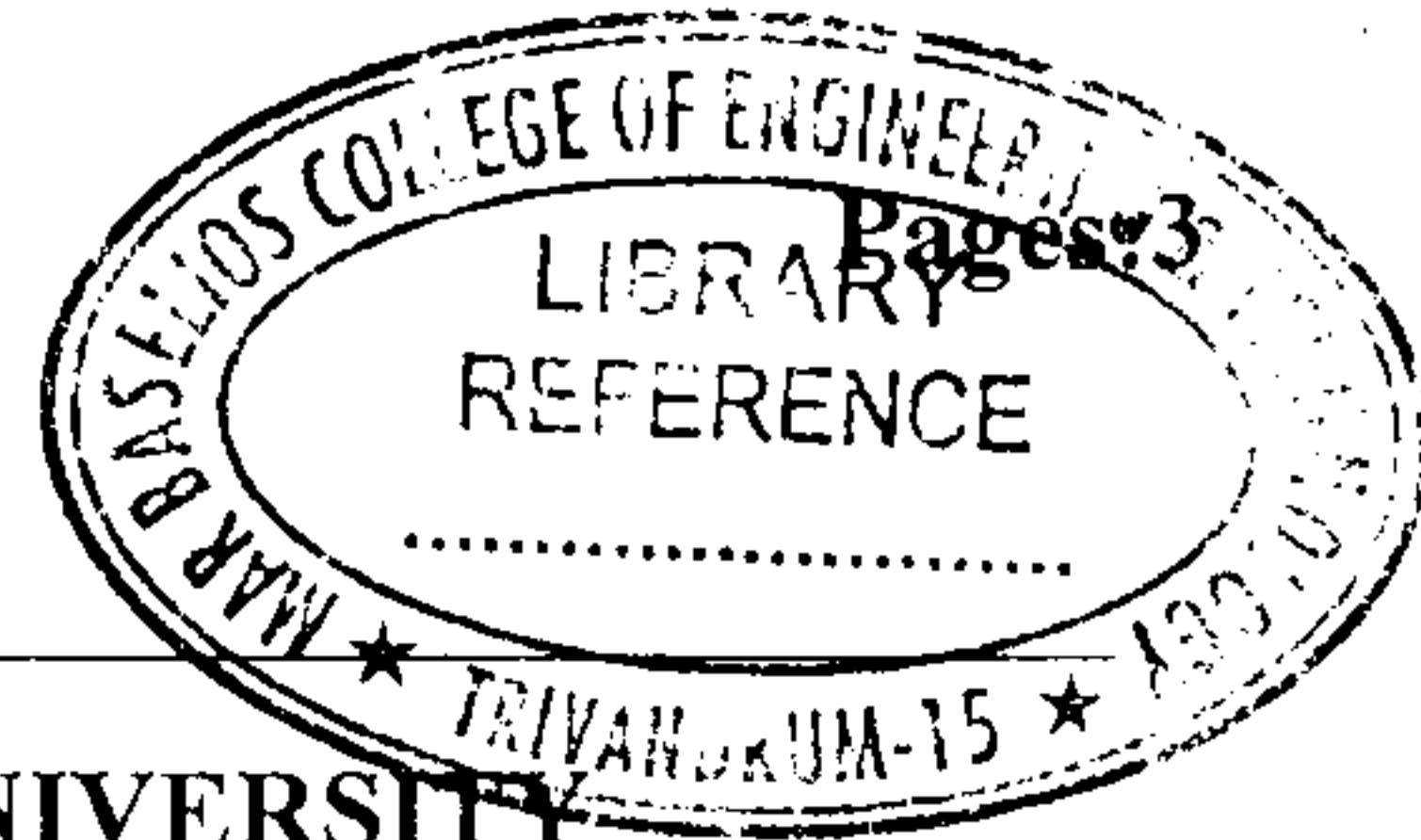


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Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**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:<br>for c in "PYTHON":<br>print (c)<br>else:<br>print ("Done")<br>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.<br>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:<br>i) Insert an element 9 at the beginning of the list.<br>ii) Insert an element 8 at the index position 3 of the list.<br>iii) Delete an element at the index position 4. | (3)   |
| 12 | Predict the output. Justify your answer<br>A=20<br>B=0<br>C=A/B<br>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)

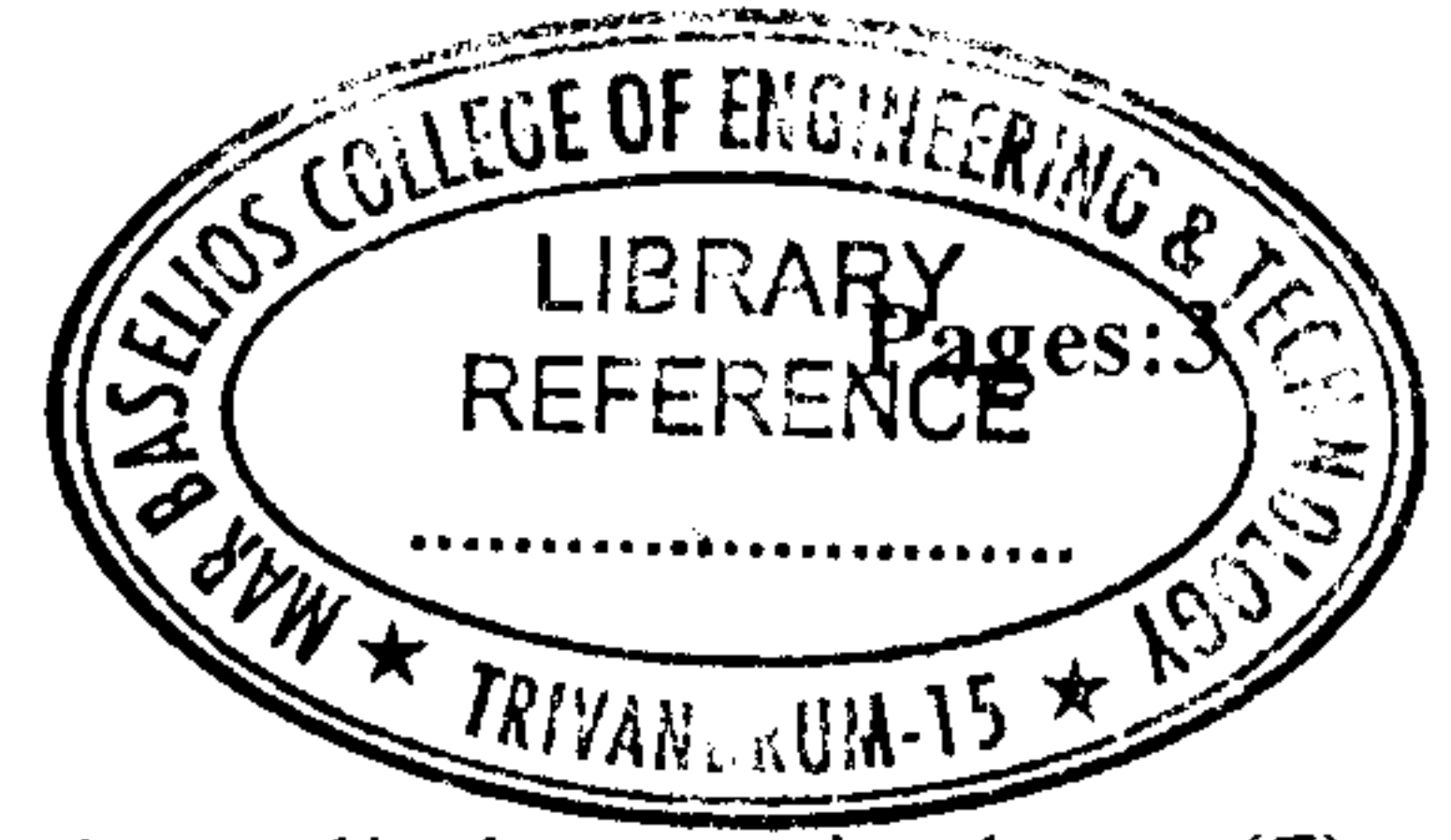
**PART C**

*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)

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

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