

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

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

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  
**FIRST SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018**

**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  | List any four input devices used with computer.  | (2)   |
| 2  | How is compiler different from interpreter?  | (3)   |
| 3  | Differentiate between assembly language and high-level languages.  | (3)   |
| 4  | Write an algorithm to find the largest among three numbers.  | (3)   |
| 5  | Which are the symbols used in flow chart?  | (3)   |
| 6  | What is a keyword? Give two examples.  | (2)   |
| 7  | Which of the following are not valid identifiers in Python? Justify your answer.<br>i) num_1 ii) 2nd_large iii) num1 iv) attendance%   | (2)   |
| 8  | Let $x = 2^{**}4/8/2$ is an expression in Python. What will be the value of x?   | (2)   |
| 9  | Differentiate between input() and raw_input() functions.   | (2)   |
| 10 | Write a Python function to find the area of a circle.  | (2)   |
| 11 | Differentiate between type conversion and coercion.  | (2)   |
| 12 | str1 ="Jython"<br>str1[0] = "P" Is there any error in this Python code? Justify your answer.   | (2)   |
| 13 | Differentiate between tuple and list.  | (3)   |
| 14 | What is the support provided by Python to handle exceptions?   | (3)   |
| 15 | What is pickling? Illustrate with example.   | (3)   |
| 16 | Define a class Mobile to store the details of a mobile (company, model & price) with the following methods:<br>i) set_details() - to set the values to the data attributes<br>ii) display_details() - to display the data attribute values.<br>Create an object of the class and invoke the methods. | (3)   |

**PART B**

*Answer any four full questions, each carries 8 marks.*

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|-------|--|-----|
| 17 a) | Draw and explain the Von Neumann and Harvard architecture.                               | (6) |
| b)    | Differentiate between ROM and RAM.   | (2) |
| 18 a) | Draw and explain instruction execution cycle.  | (4) |
| b)    | Write any four functions of a typical operating system?                                  | (4) |
| 19 a) | Draw a flow chart to find the sum of digits of a number.                                 | (4) |
| b)    | What is top-down design approach? How does it help in solving a problem?                 | (4) |
| 20 a) | Write a Python program to find the sum of even numbers from N given numbers.             | (4) |
| b)    | What is the significance of break and continue statements? Explain with proper examples. | (4) |

- 21 a) Write a Python function `is_prime(n)` , which returns True if the number `n` is prime and returns False if the number `n` is not prime. Use the `is_prime()` function to generate first `N` prime numbers. (6)
- b) What is recursion? (2)

**PART C**

*Answer any two full questions, each carries 14 marks.*

- 22 a) Write a Python function to generate first `N` Fibonacci numbers and return as a list. (7)
- b) Explain any three methods of Dictionary type and write a Python program to display the frequency of each word in a string. Use Dictionary to store the word-frequency pairs. (7)
- 23 Write a menu driven program to store the student details (rollno, name, and mark) of a class as a list tuples. The menu has the following options: (14)
- i) add – to add the details of a student
  - ii) remove – to remove the details of a student by giving rollno
  - iii) search – to search the details of a student by giving rollno and to display it
  - iv) max – to display the details of the student with highest mark.
- 24 a) Write a Python program to read two matrices from two files, find the sum and display the resultant matrix. Assume that the first line of the input file represents the order of the matrix in a comma separated format and the remaining lines represent the rows of the matrix in a comma separated format. (12)
- b) Differentiate between `read()` and `readlines()` methods of file. (2)

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