

- 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.
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)

