

**B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2024**

Second Semester

**Civil Engineering**

(Common to Electronics and Communication Engineering, Electrical and Electronics Engineering, Electronics and Instrumentation Engineering, Instrumentation and Control Engineering, Mechanical Engineering & Mechanical and Automation Engineering)

**20ESIT201 - PYTHON PROGRAMMING WITH LABORATORY**

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

**PART - A (MCQ) (20 × 1 = 20 Marks)**

Answer ALL Questions

	<i>Marks</i>	<i>K-Level</i>	<i>CO</i>
1. Which one of the following is the correct extension of the Python file? (a) .py (b) .p (c) .python (d) None of these	1	K1	CO1
2. Which of the following is a valid string literal? (a) "computer" (b) 'computer' (c) '''computer''' (d) All of these	1	K1	CO1
3. Which data type is used to store a collection of items, where each item is indexed by a key? (a) List (b) Tuple (c) Set (d) Dictionary	1	K1	CO1
4. Which of the following is placed after if condition? (a) ; (b) , (c) : (d) ::	1	K1	CO2
5. Which statement is used to stop the current iteration of the loop and continue with the next one? (a) pass (b) break (c) continue (d) jump	1	K1	CO2
6. What is the output of following code? for i in range(2.0): print(i) (a) 0.0 1.0 (b) 0 1 (c) error (d) none of the mentioned	1	K1	CO2
7. Which error is generated when a character in a string variable is modified? (a) IndexError (b) NameError (c) TypeError (d) BoundError	1	K1	CO3
8. "Cool" become "COOL", which two functions must have been applied? (a) strip() and upper() (b) strip() and lower() (c) strip() and capitalize() (d) lstrip() and rstrip()	1	K1	CO3
9. What is the output when we execute list("hello")? (a) ['h', 'e', 'l', 'l', 'o'] (b) ['hello'] (c) ['llo'] (d) ['olleh']	1	K1	CO3
10. What are the two main types of functions? (a) Custom function (b) Built-in function & User defined function (c) User function (d) System function	1	K1	CO4
11. What is a variable defined outside a function referred as? (a) static variable (b) global variable (c) local variable (d) automatic variable	1	K1	CO4
12. What is the purpose of 'is' operator? (a) To compare Values (b) To check if two variables point to the same object (c) To check if the type of two variables is same (d) To check for equality of Values and types.	1	K1	CO4
13. How do you create an object in Python? (a) MyClass object = new MyClass() (b) object = MyClass() (c) MyClass = object() (d) new MyClass()	1	K1	CO5

14. What is the first argument passed to any method of class in Python? 1 K1 CO5  
 (a) cls (b) self (c) this (d) method
15. What is the keyword used to raise an exception manually in Python? 1 K1 CO5  
 (a) throw (b) raise (c) generate (d) create
16. What is the correct order of exception handling blocks in Python? 1 K1 CO5  
 (a) try - except – finally (b) try - finally – except  
 (c) except - try – finally (d) finally - try – except
17. How many comparisons are needed to sort an array of length 5 if a straight selection sort is used and array is already in the opposite order? 1 K1 CO6  
 (a) 1 (b) 5 (c) 10 (d) 20
18. Which of the following numbers is not a prime number? 1 K1 CO6  
 (a) 431 (b) 437 (c) 557 (d) 571
19. If A is m \* n matrix such that AB & BA both are defined, then B is a matrix of \_\_\_\_\_ order. 1 K1 CO6  
 (a) n \* n (b) n \* m (c) m \* n (d) n \* m
20. Which of the following is a valid reason to use user defined exceptions in Python? 1 K1 CO6  
 (a) To replace built-in exceptions (b) To handle unexpected errors  
 (c) To confuse the programmer (d) To reduce code readability

**PART - B (10 × 2 = 20 Marks)**

Answer ALL Questions

21. Discuss different modes of operation in python. 2 K2 CO1
22. Discuss about Indentation in Python. 2 K2 CO1
23. Explain the type of Boolean operators with an example. 2 K2 CO2
24. Interpret chained conditional statement with an example. 2 K2 CO2
25. Differentiate string with slicing operator. 2 K2 CO3
26. Illustrate negative indexing in list with an example. 2 K2 CO3
27. Distinguish between files and modules. 2 K2 CO4
28. Discuss about the purpose of package creation in Python. 2 K2 CO4
29. Differentiate between local and global variables 2 K2 CO5
30. Infer the exception handling inside a program when you try to open a non-existent file 2 K2 CO6

**PART - C (6 × 10 = 60 Marks)**

Answer ALL Questions

31. a) Write a python program to perform Arithmetic Operations using switch statement. 10 K2 CO1  

**OR**

 b) Explain in detail about the different types of operators in Python and discuss the precedence of an expression evaluation. 10 K2 CO1
32. a) Explain in detail about the looping statements in Python with an example. 10 K2 CO2  

**OR**

 b) i) Demonstrate a python code to print all numbers in a range (a,b) divisible by a given number (n). 6 K2 CO2  
 ii) Demonstrate a Python program to find the GCD of given two numbers. 4 K2 CO2
33. a) i) Discuss in detail about the basic list operations with an example. 6 K2 CO3  
 ii) Write a Python program to add two matrices. 4 K2 CO3

**OR**

b) i) Explain in detail about string slicing. Illustrate how it is done in python with an example. 6 K2 CO3

ii) Write a python code to search a string in the given list. 4 K2 CO3

34. a) Explain with an example to copy the contents of one file to another. 10 K2 CO4

**OR**

b) Explain the use of User defined Module and Predefined Modules give an example. 10 K2 CO4

35. a) Write a program to find the area, perimeter and height of the triangle using the concept of classes and objects. 10 K2 CO5

**OR**

b) Describe how exceptions are handled in python with necessary examples. 10 K2 CO5

36. a) Write a function to determine whether a given natural number is a perfect number. 10 K2 CO6

**OR**

b) Demonstrate a program to compute price per unit weight of an item using try – except – else block. 10 K2 CO6