



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)  
Dundigal, Hyderabad-500043

## CIVIL ENGINEERING

### TUTORIAL QUESTION BANK

<b>Course Title</b>	<b>PROGRAMMING FOR PROBLEM SOLVING USING PYTHON</b>				
<b>Course Code</b>	ACSB38				
<b>Programme</b>	B.Tech				
<b>Semester</b>	II	CIVIL			
<b>Course Type</b>	Foundation				
<b>Regulation</b>	IARE - R18				
<b>Course Structure</b>	<b>Theory</b>			<b>Practical</b>	
	<b>Lectures</b>	<b>Tutorials</b>	<b>Credits</b>	<b>Laboratory</b>	<b>Credits</b>
	3	-	3	-	-
<b>Chief Coordinator</b>	Dr. P Govardhan, Associate Professor				
<b>Course Faculty</b>	Ms. N Jayanthi, Assistant Professor Ms. P Sasmita, Assistant Professor				

#### COURSE OBJECTIVES:

<b>The course should enable the students to:</b>	
I	Understand the fundamentals of Python programming concepts and its applications.
II	Improve problem solving skills using control structures and list.
III	Understand the basics of object-oriented concepts using Python.
IV	Describe string handling to solve real-time problems.
V	Design and implement programs using functions.

#### COURSE OUTCOMES (COs):

CO 1	Understand and comprehend the basics of Python programming.	
CO 2	Express different conditional and decision making statements used to develop Python applications.	
CO 3	Learn and implement various data structures provided by Python library including string, list, dictionary and its operations etc	
CO 4	Define and demonstrate the use of the built-in functions and better usage of string methods in the development of Python programming.	
CO 5	Develop real-world applications by using various object oriented programming concepts.	

### **COURSE LEARNING OUTCOMES (CLOs):**

ACSB38.01	Describe the Features of Python, Data types.
ACSB38.02	Summarize the concept of various operators.
ACSB38.03	Describe the usage of different input and output functions.
ACSB38.04	Understand importance of membership and identity operators.
ACSB38.05	Describe the various control structures.
ACSB38.06	Determine different conditional blocks of if statements.
ACSB38.07	Describe the usage of for and while loop.
ACSB38.08	Understand break, continue and return statements .
ACSB38.09	Summarize the concept of list creation and manipulations.
ACSB38.10	Describe the usage of tuple data type and its methods.
ACSB38.11	Determine the usage of dictionaries.
ACSB38.12	Understand importance of arrays in Python.
ACSB38.13	Understand Creating strings and basic operations on strings.
ACSB38.14	Analyze the concept of String testing methods, Defining a function.
ACSB38.15	Illustrate Calling a function, Returning multiple values from a function.
ACSB38.16	Contrast the Usage of Functions are first class objects, Formal and actual arguments,
ACSB38.17	Define Positional arguments, Recursive functions.
ACSB38.18	Identify the features of Object Oriented Programming System (OOPS).
ACSB38.19	Use the concept of Classes and Objects, Encapsulation, Abstraction, Inheritance, and Polymorphism.
ACSB38.20	Describe types of variables and methods.

## TUTORIAL QUESTION BANK

MODULE- I				
INTRODUCTION TO PYTHON				
Part - A (Short Answer Questions)				
S No	QUESTIONS	Blooms Taxonomy Level	Course Outcomes	Course Learning Outcomes (CLOs)
1	List out the features of Python programming language?	Remember	CO 1	ACSB38.01
2	Describe the role of Python Interactive shell?	Understand	CO 1	ACSB38.01
3	Explicit the different modes of working in Python?	Remember	CO 1	ACSB38.03
4	Write the rules for identifier?	Remember	CO 1	ACSB38.01
5	How to check the number of keywords in Python?	Understand	CO 1	ACSB38.04
6	Explore the standard data types in Python?	Remember	CO 1	ACSB38.01
7	Illustrate bitwise operator.	Understand	CO 1	ACSB38.02
8	Explain membership operator.	Remember	CO 1	ACSB38.04
9	Write a short note on Boolean datatype.	Remember	CO 1	ACSB38.04
10	List out various keywords available in Python.	Understand	CO 1	ACSB38.01
11	List out the operators in Python?	Understand	CO 1	ACSB38.02
12	Simplify Python identifier?	Remember	CO 1	ACSB38.02
13	Analyze the various types of loops in Python?	Understand	CO 1	ACSB38.02
14	Describe the usage of sets in Python?	Understand	CO 1	ACSB38.03
15	Write in detail about object in Python?	Remember	CO 1	ACSB38.03
16	Enumerate sequences in Python?	Understand	CO 1	ACSB38.03
17	Extend input and output statement?	Understand	CO 1	ACSB38.03
18	Give one example of Python program?	Remember	CO 1	ACSB38.04
19	Write different types of operators?	Understand	CO 1	ACSB38.02
20	Explain about the usage of sets in Python?	Remember	CO 1	ACSB38.01
Part - B (Long Answer Questions)				
1	Estimate the features of Python programming language in detail.	Understand	CO 1	ACSB38.01
2	Express an operator and explain about the arithmetic operators and assignment operators in Python with example.	Understand	CO 1	ACSB38.02
3	Describe about input statements in Python examples.	Remember	CO 1	ACSB38.02
4	Explain about features of operators	Understand	CO 1	ACSB38.01
5	Justify in detail about data types of Python.	Understand	CO 1	ACSB38.02
6	Write the concept of Python identifier.	Understand	CO 1	ACSB38.04
7	Simplify bitwise operator.	Understand	CO 1	ACSB38.02
8	Summarize about built-in data types and sequences in Python with examples.	Remember	CO 1	ACSB38.01
9	Describe the set data type in Python and operations on set data types.	Understand	CO 1	ACSB38.01
10	Does Python allow you to program in a structured style?	Understand	CO 1	ACSB38.01
11	List out different arithmetic Python?	Remember	CO 1	ACSB38.04
12	Describe about logical operators with examples.	Understand	CO 1	ACSB38.02
13	Categorize Python data types?	Understand	CO 1	ACSB38.0
14	Explain about comparison in Python in detail.	Remember	CO 1	ACSB38.01
15	Obtain does “#” symbol do in Python?	Understand	CO 1	ACSB38.01
16	Describe the Boolean operators with example.	Remember	CO 1	ACSB38.02
17	Explain about the unary operators and relational operators in Python with example.	Understand	CO 1	ACSB38.02
18	Explain about Bitwise operators and membership operators in Python with example.	Understand	CO 1	ACSB38.02
19	With the necessary examples explain various keywords available in Python.	Understand	CO 1	ACSB38.02
20	Explain in detail about identity operators and operator precedence and associativity with example.	Understand	CO 1	ACSB38.02
Part - C (Problem Solving and Critical Thinking Questions)				
1	Explain different sequences in Python?	Understand	CO 1	ACSB38.01
2	Write example for add two objects result in third object.	Understand	CO 1	ACSB38.01

3	Design a Python program to count the number of words in a text file	Understand	CO 1	ACSB38.02
4	Write a Python program to find area of circle.	Understand	CO 1	ACSB38.02
5	Write a Python program to find Perimeter of rectangle	Understand	CO 1	ACSB38.01
6	Write a Python program to find simple interest.	Understand	CO 1	ACSB38.02
7	Explain and Write a Python program to find compound interest.	Understand	CO 1	ACSB38.01
8	To find ASCII value of a character by a Python program.	Understand	CO 1	ACSB38.01
9	Write a Python program to add two positive integers without using the '+' operator.	Understand	CO 1	ACSB38.02
10	By using Python program to find volume of cube?	Understand	CO 1	ACSB38.02

## MODULE-II

### CONTROL STRUCTURE

#### Part – A (Short Answer Questions)

1	Describe the usage of String in Python language?	Remember	CO 2	ACSB38.05
2	Explain different types of conditional statements used in Python.	Remember	CO 2	ACSB38.06
3	Discuss the use of if statement.	Remember	CO 2	ACSB38.06
4	Why loops are used in development of a program?	Understand	CO 2	ACSB38.05
5	List the types of control structure?	Understand	CO 2	ACSB38.06
6	With the necessary examples write the syntax of while loop?	Remember	CO 2	ACSB38.08
7	List different types of loops?	Understand	CO 2	ACSB38.08
8	Narrate break statement in Python?	Understand	CO 2	ACSB38.07
9	Develop pass in Python?	Understand	CO 2	ACSB38.07
10	How are nested for loop used in Python?	Remember	CO 2	ACSB38.06
11	Use of while loop in Python?	Understand	CO 2	ACSB38.10
12	With the syntax explain if-elif statement?	Remember	CO 2	ACSB38.08
13	Express syntax of for loop?	Understand	CO 2	ACSB38.08
14	How nested for loop Syntax used in Python?	Remember	CO 2	ACSB38.08
15	Justify the purpose of loops in Python?	Understand	CO 2	ACSB38.08
16	How does conditional blocks using if statement in Python?	Understand	CO 2	ACSB38.05
17	Simplify if-else statement in Python?	Remember	CO 2	ACSB38.07
18	Explain the difference between for loop and nested for loop?	Remember	CO 2	ACSB38.05
19	Distinguish the difference between while loop and nested for loop?	Understand	CO 2	ACSB38.05
20	Compare between continue and break statement?	Remember	CO 2	ACSB38.08

#### Part - B (Long Answer Questions)

1	Analyze loop? Explain the types of loops?.	Understand	CO 2	ACSB38.05
2	Examine if-else statement? Explain with example ?	Understand	CO 2	ACSB38.08
3	Enlist different types of statements?	Understand	CO 2	ACSB38.08
4	Narrate the example of while loop.	Remember	CO 2	ACSB38.06
5	Explore in detail about range function with suitable examples?	Understand	CO 2	ACSB38.06
6	Describe a conditional blocks using if statement? Explain with an example?	Understand	CO 2	ACSB38.07
7	Explain continue statement with example.	Understand	CO 2	ACSB38.09
8	Illustrate the if-elif-else statement and while loop with examples.	Remember	CO 2	ACSB38.06
9	Print 10 elements using for loop.	Understand	CO 2	ACSB38.06
10	Narrate various conditional and control structures used in Python.	Understand	CO 2	ACSB38.06
11	List different types of loops.	Remember	CO 2	ACSB38.05
12	Explain multiple views of an object with suitable example.	Understand	CO 2	ACSB38.06
13	State class. Explain Nested classes and local classes with an example.	Understand	CO 2	ACSB38.06
14	Explain differences between various types if conditions?	Remember	CO 2	ACSB38.08
15	Justify a nested loop?	Remember	CO 2	ACSB38.06
16	Simulate the difference between nested for and for loop Python.	Understand	CO 2	ACSB38.06
17	Estimate pass statement write with example?	Understand	CO 2	ACSB38.06
18	Obtain pass statement?	Remember	CO 2	ACSB38.08
19	Create break statement with example?	Remember	CO 2	ACSB38.05
20	Explain about different types of control structure?	Understand	CO 2	ACSB38.05

#### Part - C (Problem Solving and Critical Thinking Questions)

1	Prove a Python program using while loop first N numbers divisible by 5.	Understand	CO 2	ACSB38.06
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2	Create a Python program to construct the following pattern, using a nested for loop. *	Understand	CO 2	ACSB38.08
3	Solve a Python program that prints all the numbers from 0 to 6 except 3 and 6.	Remember	CO 2	ACSB38.06
5	Enlist a simple program in Python to convert decimal number into binary, octal and hexadecimal number system in Python.	Understand	CO 2	ACSB38.08
6	Design and develop a Python program that display Fibonacci series.	Understand	CO 2	ACSB38.06
7	Develop a Python program weather a given number is prime or not,	Understand	CO 2	ACSB38.05
8	Validate a Python program for reverse a number.	Understand	CO 2	ACSB38.05
9	Write a Python program that given number is palindrome or not.	Understand	CO 2	ACSB38.08
10	Write a Python program weather a given number is positive or not.	Remember	CO 2	ACSB38.06

### MODULE -III

#### LIST,TUPLES,DICTIONARY AND ARRAYS

##### Part - A (Short Answer Questions)

1	Illustrate about List in Python programming language.	Remember	CO 3	ACSB38.09
2	Explain the use of tuple in Python programming language.	Remember	CO 3	ACSB38.10
3	Illustrate dictionary in Python programming language.	Remember	CO 3	ACSB38.10
4	Solve nested list in Python programming language .	Remember	CO 3	ACSB38.11
5	Explain the list method index() with an example.	Remember	CO 3	ACSB38.09
6	Design about Creating a tuple in Python.	Understand	CO 3	ACSB38.11
7	Explain basic operations in tuple.	Understand	CO 3	ACSB38.12
8	Write about the following operations on dictionary i)len(). ii)min().	Understand	CO 3	ACSB38.11
9	Explain the process of how to delete dictionary.	Understand	CO 3	ACSB38.11
10	Mention and explain different List manipulations.	Remember	CO 3	ACSB38.12

##### CIE-II

11	Illustrate an array. Write the syntax of defining an array with an example	Remember	CO 3	ACSB38.10
12	Specify the process of importing array module.	Understand	CO 3	ACSB38.12
13	Compare and contrast the differences between indexing and slicing.	Understand	CO 3	ACSB38.10
14	Compare between actual and formal arguments with example.	Understand	CO 3	ACSB38.11
15	Mention any three numpy() methods with examples.	Remember	CO 3	ACSB38.11
16	List the advantages of array?	Remember	CO 3	ACSB38.12
17	Write the difference between list and tuple.	Understand	CO 3	ACSB38.12
18	Explain syntax of matrix in Python programming.	Understand	CO 3	ACSB38.11
19	Write a Python array that accepts two values and finds their sum.	Remember	CO 3	ACSB38.12
20	Summarize recursive function and illustrate with example program.	Remember	CO 3	ACSB38.10

##### Part – B (Long Answer Questions)

1	Explain about tuples and basic operations of tuples.	Understand	CO 3	ACSB38.11
2	Discuss the following methods on dictionary i)index() ii)sorted() iii)max()	Understand	CO 3	ACSB38.11
3	Explain the following methods i)append() ii)index()	Understand	CO 3	ACSB38.12
4	Distinguish different List methods with examples	Understand	CO 3	ACSB38.11
5	Explain how can we insert and extend list in Python with an example	Understand	CO 3	ACSB38.10
6	Calculate a list of tuples by second item.	Remember	CO 3	ACSB38.09
7	Explain a pop() and count()method for list in Python.	Remember	CO 3	ACSB38.11

8	Discuss about the following methods in List: i)copy() ii)reverse() iii)extend()	Understand	CO 3	ACSB38.10
9	With necessary examples and syntax of dictionary.	Understand	CO 3	ACSB38.12
10	Write use of nested list in Python.	Remember	CO 3	ACSB38.10
<b>CIE-II</b>				
11	Explain creating an array in Python programming.	Understand	CO 3	ACSB38.09
12	Explain how array can return same output with an example by using Python.	Understand	CO 3	ACSB38.11
13	Describe the role of Python array.	Understand	CO 3	ACSB38.10
14	Write multiplication of matrix by using Python.	Remember	CO 3	ACSB38.11
15	Explain how transpose values with an example.	Understand	CO 3	ACSB38.12
16	Discuss about array creation using numpy.	Remember	CO 3	ACSB38.11
17	Write a Python program to implement pythagorean triplet in an array	Remember	CO 3	ACSB38.09
18	Code by using ascending an array with examples.	Understand	CO 3	ACSB38.10
19	Elucidate a code by using Python and separate array number is prime or not.	Remember	CO 3	ACSB38.12
20	Write a Python program to check the given number is palindrome or not.	Remember	CO 3	ACSB38.11
<b>Part – C (Problem Solving and Critical Thinking)</b>				
1	Create a Python program to merging two dictionary?	Remember	CO 3	ACSB38.11
2	Write a Python program that implements i)Reverse a list. ii)Copy a list. iii)Insert a number in list.	Understand	CO 3	ACSB38.10
3	Design a Python program to find the first 5 digits in a list.	Understand	CO 3	ACSB38.09
4	Write a Python program to convert a tuple into a dictionary.	Understand	CO 3	ACSB38.12
5	Write a Python program to update or delete a list.	Remember	CO 3	ACSB38.11
<b>CIE-II</b>				
06	Design a Python i)to test whether a number is even or odd. ii)to calculate factorial value of numbers from 1 to 10	Understand	CO 3	ACSB38.12
07	Write a Python program by using array and list.	Remember	CO 3	ACSB38.12
08	Simplify a program for array using numpy.	Understand	CO 3	ACSB38.11
09	Explain and write a code for array creation using numpy.	Understand	CO 3	ACSB38.10
10	Solve a Python program to calculate slicing an array.	Understand	CO 3	ACSB38.12
11	Convert array into zig-zag fashion in Python.	Understand	CO 3	ACSB38.12
<b>MODULE-IV</b>				
<b>STRINGS AND FUNCTIONS</b>				
<b>Part - A (Short Answer Questions)</b>				
1	What is String? Write the syntax for creating a string with example	Remember	CO 3	ACSB38.13
2	“There is no difference between single quotes and double quotes while creating the string”. Justify the statement.	Remember	CO 3	ACSB38.16
3	List out different string operations. Write an example program for any three string operations.	Remember	CO 3	ACSB38.14
4	List the escape characters that can be used in strings.	Remember	CO 3	ACSB38.13
5	What is the predefined function used to find length of a String? Illustrate with an example.	Remember	CO 3	ACSB38.16
6	Write about indexing concept in strings.	Understand	CO 3	ACSB38.15
7	Explain the methods that are used to find substrings in main string?	Understand	CO 3	ACSB38.13
8	Write about the following operations on strings i)Slicing ii)Repeating	Understand	CO 3	ACSB38.13
9	Explain how to remove spaces from a string. Write related examples	Understand	CO 3	ACSB38.14
10	Mention and explain different sting testing methods.	Remember	CO 3	ACSB38.12
11	Justify a function. Write the syntax of defining a function with example	Remember	CO 3	ACSB38.12
12	Specify the process of calling a function.	Understand	CO 3	ACSB38.12
13	Write the difference between functions returning single value and functions returning multiple values.	Understand	CO 3	ACSB38.13
14	Compare actual and formal arguments with example.	Understand	CO 3	ACSB38.14
15	Mention different types of arguments. Define positional arguments	Remember	CO 3	ACSB38.15

16	List out the advantages of functions?	Remember	CO 3	ACSB38.12
17	List out various methods that String contains.	Understand	CO 3	ACSB38.12
18	Why functions in Python are called as first class objects? Explain.	Understand	CO 3	ACSB38.14
19	Write a Python program that accepts two values and finds their sum.	Remember	CO 3	ACSB38.12
<b>Part – B (Long Answer Questions)</b>				
1	Summarize the escape characters that can be used in strings with an example	Understand	CO 3	ACSB38.14
2	Discuss the following operations on strings i)Length of string ii)Indexing in strings iii)counting substrings in a string	Understand	CO 3	ACSB38.16
3	Explain the following methods i)upper() ii)lower() iii)swapcase() iv)title()	Understand	CO 3	ACSB38.12
4	Explain different string and character testing methods with examples	Understand	CO 3	ACSB38.13
5	Express how can we split and join strings in Python with an example	Understand	CO 3	ACSB38.13
6	Write a Python program to display all positions of a substring in a given main string.	Remember	CO 3	ACSB38.14
7	Illustrate the concept of slicing the strings with an example program.	Remember	CO 3	ACSB38.15
8	Discuss about the following methods that are used to remove spaces from a string. i)rstrip() ii)lstrip() iii)strip()	Understand	CO 3	ACSB38.16
9	Explain the methods that are useful to locate sub strings in a string with example programs.	Understand	CO 3	ACSB38.11
10	Write various ways of assigning a group of characters to a variable.	Remember	CO 3	ACSB38.15
11	Explain the following i)Defining a function ii)Calling a function	Understand	CO 3	ACSB38.13
12	Explain how functions can return results with an example.	Understand	CO 3	ACSB38.13
13	Describe the role of Python interpreter in functions. Explain possible ways of assigning a function.	Understand	CO 3	ACSB38.14
14	Draw and explain the steps involved in Towers of Hanoi problem through recursion.	Remember	CO 3	ACSB38.15
15	Explain how a function can return multiple values with an example.	Understand	CO 3	ACSB38.13
16	Discuss about i)Positional arguments ii)Variable length arguments	Remember	CO 3	ACSB38.15
17	Write a Python program to implement Towers of Hanoi problem using recursion.	Remember	CO 3	ACSB38.15
18	List and explain different ways of passing values to function with examples.	Understand	CO 3	ACSB38.14
19	Design a Python function to check the given number is prime or not.	Remember	CO 3	ACSB38.13
20	Write a Python function to check the given number is palindrome or not.	Remember	CO 3	ACSB38.13
<b>Part – C (Problem Solving and Critical Thinking)</b>				
1	Design a Python program to access characters of a string using for loop.	Remember	CO 3	ACSB38.11
2	Write a Python program that implements i)string concatenation ii)string comparison iii)string length	Understand	CO 3	ACSB38.11
3	Design a Python program to find the first occurrence of sub string in given main string.	Understand	CO 3	ACSB38.11
4	Develop Python program that implements different string testing methods	Understand	CO 3	ACSB38.12
5	Solve a Python program to update or delete a string	Remember	CO 3	ACSB38.11
6	Write a Python function i)to test whether a number is even or odd. ii)to calculate factorial value of numbers from 1 to 10	Understand	CO 3	ACSB38.12

7	Develop a Python program to understand the positional arguments of a function.	Remember	CO 3	ACSB38.15
8	Predict the output of following code def swap(x, y): temp = x; x = y; y = temp; # Driver code x = 2 y = 3 swap(x, y) print(x) print(y)	Understand	CO 3	ACSB38.13
9	Design a Python function to sum all the numbers in a list. Sample List : (8, 2, 3, 0, 7) Expected Output : 20	Understand	CO 3	ACSB38.16
10	Solve a Python program to calculate factorial of a given number using recursion concept.	Understand	CO 3	ACSB38.15

## MODULE-V

### INTRODUCTION TO OOPS

#### Part – A (Short Answer Questions)

1	Summarize class and object.	Remember	CO 2	ACSB38.17
2	Explain how the class is defined, object is created, and methods are invoked in Python.	Remember	CO 2	ACSB38.20
3	Discuss the use of init method in Python.	Remember	CO 2	ACSB38.19
4	Why objects are mutable?	Understand	CO 2	ACSB38.18
5	List the features of the object oriented programming through Python.	Understand	CO 2	ACSB38.17
6	Infer inheritance?	Remember	CO 2	ACSB38.19
7	List different types of inheritance.	Understand	CO 2	ACSB38.20
8	Justify namespace in Python?	Understand	CO 2	ACSB38.19
9	Demonstrate self in Python?	Understand	CO 2	ACSB38.20
10	Justify classes created in Python?	Remember	CO 2	ACSB38.19
11	Solve Polymorphism in Python?	Understand	CO 2	ACSB38.20
12	Explicit multiple inheritance?	Remember	CO 2	ACSB38.19
13	Simplify operator overloading?	Understand	CO 2	ACSB38.17
14	Obtain meant single inheritance ?	Remember	CO 2	ACSB38.18
15	Summarize the purpose of inheritance in object oriented program in Python?	Understand	CO 2	ACSB38.19
16	Create the super() method in Python?	Understand	CO 2	ACSB38.20
17	Justify __init__ in Python?	Remember	CO 2	ACSB38.17
18	Compare the difference between abstract class and interface?	Remember	CO 2	ACSB38.19
19	Illustrate abstract method in Python ?	Understand	CO 2	ACSB38.18
20	Express multilevel inheritance?	Remember	CO 2	ACSB38.20

#### Part - B (Long Answer Questions)

1	Describe polymorphism? Explain the polymorphism with suitable example program.	Understand	CO 2	ACSB38.18
2	Simplify inheritance? Explain with example and write a program for representing inheritance.	Understand	CO 2	ACSB38.19
3	List different types of inheritance and Explain each and every one with suitable examples.	Understand	CO 2	ACSB38.20
4	Create the following with examples. i. Creating a class ii. Constructor iii. The self variable	Remember	CO 2	ACSB38.19
5	Explain in detail about class, objects and methods with suitable examples?	Understand	CO 2	ACSB38.18
6	Extend a namespace? How do you resolve the name conflicts using namespaces? Explain with an example.	Understand	CO 2	ACSB38.17
7	Validate the super() method with two suitable examples.	Understand	CO 2	ACSB38.20



8	Classify the relationship between a class and an object? Explain this with two suitable examples.	Remember	CO 2	ACSB38.19
9	Justify abstract class? Explain abstract class method with example.	Understand	CO 2	ACSB38.17
10	Why does the object-oriented philosophy need functions to be defined inside the classes? What could be the advantage?	Understand	CO 2	ACSB38.19
11	List different methods of realizing polymorphism and explain them with example.	Remember	CO 2	ACSB38.18
12	Explain multiple views of an object with suitable example.	Understand	CO 2	ACSB38.20
13	Define class. Explain Nested classes and local classes with an example.	Understand	CO 2	ACSB38.19
14	Explain differences between various types of inheritance?	Remember	CO 2	ACSB38.18
15	What is a class? What is the relation between an object and a class? Write a program which shows how to define a class, how to access member functions and how to create and access objects in Python.	Remember	CO 2	ACSB38.20
16	Describe inheritance? Explain with example how to inherit a class in Python.	Understand	CO 2	ACSB38.18
17	Create a nested class? What are its advantages? How it is defined and declared in Python?	Understand	CO 2	ACSB38.20
18	List out inheritance and list different types of inheritance. How multilevel inheritance is different from multiple inheritance?	Remember	CO 2	ACSB38.17
19	Create abstract class? Write differences between abstract classes and interfaces with examples.	Remember	CO 2	ACSB38.18
20	Explain the following with examples. i. Polymorphism ii. Inheritance iii. Abstract class	Understand	CO 2	ACSB38.19
<b>Part - C (Problem Solving and Critical Thinking Questions)</b>				
1	Create a class whose object represents a complex number (A complex number contains a real part and an imaginary part). Write a program so that it is possible to add two objects of this class and store the result in third object.	Understand	CO 2	ACSB38.20
2	Explain public, private and protected access specifiers and show the ambiguity in multiple and multilevel inheritance.	Understand	CO 2	ACSB38.19
3	Create a class called Time that has separate int member data for hours, minutes and seconds. One constructor should initialize this data to 0. and another should initialize it to fixed values. A member function should display it, in 11:59:59 format. Write a program to add time of two objects by overloading '+' operator.	Remember	CO 2	ACSB38.18
5	Explain the inheritance. List different types of inheritance. Write differences between them.	Understand	CO 2	ACSB38.18
6	Justify "Class is a template while Object is data".	Understand	CO 2	ACSB38.19
7	Describe polymorphism as applied to OOP. Explain polymorphism with examples.	Understand	CO 2	ACSB38.17
8	Describe abstract classes and interfaces. Explain differences between abstract class and interface.	Understand	CO 2	ACSB38.19
9	Justify different forms of inheritance? Give an example for each and every inheritance.	Understand	CO 2	ACSB38.18
10	Explain how base class member functions can be invoked in a derived class if the derived class also has a member function with the same name.	Remember	CO 2	ACSB38.20

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