Hall Ticket No | | | | | | | | | | | Question Paper Code: AITB01

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

MODEL QUESTION PAPER - I

B.Tech III Semester End Examinations, November - 2019

Regulations: R18

OBJECT ORIENTED PROGRAMMING THROUGH PYTHON

(Common to CSE & IT)

Time: 3 hours **Max. Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

MODULE – I

1.	a)	Explain about features of Object Oriented Programming compared with the procedure oriented programming.	**[7M]**
	b)	Write code snippets in Python to perform the following a. Accessing elements of a tuple b. Modifying elements of a tuple c. Deleting elements of a tuple	**[7M]**
2.	a)	What is an operator and explain about the arithmetic operators and assignment operators in Python with example.	**[7M]**
	b)	Explain about identity operators and operator precedence and associativity with example.	**[7M]**

MODULE – II

3.	a)	Defining the following with examples. i. Creating a class ii. Constructor iii. The self variable	**[7M]**
	b)	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.	**[7M]**
4.	a)	Explain the following with examples. i. Polymorphism ii. Inheritance iii. Abstract class	**[7M]**
	b)	What is a namespace? How do you resolve the name conflicts using namespaces? Explain with an example.	**[7M]**

MODULE – III

5.	a)	Discuss the following operations on strings i)Length of string ii)Indexing in strings iii)counting substrings in a string	**[7M]**
	b)	Discuss about the following methods that are used to remove spaces from a string. i)rstrip() ii)lstrip() iii)strip()	**[7M]**
6.	a)	Describe the role of Python interpreter in functions. Explain possible ways of assigning a function.	**[7M]**
	b)	Explain the following i)Defining a function ii)Calling a function	**[7M]**

MODULE – IV

7.	a)	How the exceptions are handled in Python? Explain exception handling mechanism in Python?	**[7M]**
	b)	What are the rules in Python we need to follow when overriding a method that throws an exception?	**[7M]**
8.	a)	Justify that we can either define an "**except**" or a "**finally**" clause with every try block. You can't club these together. Also, you shouldn't use the "**else**" clause along with a "**finally**" clause.	**[7M]**
	b)	What are the legal combinations of try, catch and finally blocks? Explain?	**[7M]**

MODULE – V

9.	a)	Write the working procedure of containers.	**[7M]**
	b)	How to create message widget by using Python?	**[7M]**
10.	a)	Consider a Python GUI program that produces a window with the following widgets 1. A text box to display the value of one element of a given list 2. A button to retrieve the previous value in that list(if there is one).This button is displayed if there is no previous value in the list	**[7M]**
	b)	What is Python widget? Explain interactive linear and non linear regression model	**[7M]**

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COURSE OBJECTIVES:

The course should enable the students to:

I	Understand the fundamentals of Python programming concepts and its applications.
II	Understand the object-oriented concepts using Python in problem solving.
III	Apply string handling and function basics to solve real-time problems.
IV	Illustrate the method of solving errors using exception handling.
V	Design and implement programs using multi threading concepts

COURSE OUTCOMES (COs):

CO 1	Describe Features of Python, Data types, Operators, Input and output, Control Statements, Features of Object oriented programming system (OOPS).Classes and Objects, Encapsulation, Abstraction, Inheritance, Polymorphism.
CO 2	Determine Creating a class, The Self variable, Constructor, Types of Variable, Namespaces, Types of Methods, Inheritance and Polymorphism Constructors in inheritance, The super() method, Types of inheritance, Polymorphism, Abstract classes and Interfaces.
CO 3	Understand Creating strings and basic operations on strings, String testing methods, Defining a function, Calling a function, Returning multiple values from a function, Functions are first class objects, Formal and actual arguments, Positional arguments, Recursive functions.
CO 4	Explore the concept of Errors in a Python program, Exceptions, Exception handling, Types of exceptions, The Except block, The assert statement, user-defined exceptions
CO 5	Knowledge The Root window, Fonts and colors, Working with containers, Canvas, Frames, Widgets ,Button widget, Label Widget, Message widget, Text widget, Radio button Widget, Entry widget.

COURSE LEARNING OUTCOMES (CLOs):

AITB01.01	Describe the Features of Python, Data types.
AITB01.02	Summarize the concept of Operators, Input and output, Control Statements.
AITB01.03	Identify the features of Object Oriented Programming System (OOPS).
AITB01.04	Use the concept of Classes and Objects, Encapsulation.
AITB01.05	Describe Abstraction, Inheritance, and Polymorphism.
AITB01.06	Determine Creating a class, The Self variable.
AITB01.07	Understand types of variable, Namespaces.
AITB01.08	Determine types of Methods, Inheritance and Polymorphism.
AITB01.09	Use Constructors in inheritance, the super() method.
AITB01.10	Illustrate types of inheritance, Polymorphism, Abstract classes and Interfaces.
AITB01.11	Understand Creating strings and basic operations on strings.

AITB01.12	Analyze the concept of String testing methods, Defining a function.
AITB01.13	Illustrate Calling a function, Returning multiple values from a function.
AITB01.14	Contrast the Usage of Functions are first class objects, Formal and actual arguments.
AITB01.15	Define Positional arguments, Recursive functions.
AITB01.16	Discuss the concept of Errors in a Python program.
AITB01.17	Understand Exceptions, Exception handling.
AITB01.18	Summarize the concept of types of exceptions.
AITB01.19	Discuss the Except block, the assert statement.
AITB01.20	Understand the concept of user-defined exceptions.
AITB01.21	Knowledge about the Root window, Fonts and colors.
AITB01.22	Apply Working with containers, Canvas.
AITB01.23	Understand Widgets, Button widget, Label Widget.
AITB01.24	Implement Message widget, Text widget.
AITB01.25	Illustrate Radio button Widget, Entry widget.

MAPPING OF SEMESTER END EXAMINATION - COURSE OUTCOMES

SEE Question No		Course Learning Outcomes		Course Outcomes	Blooms Taxonomy Level
1	a	AITB01.03	Identify the features of Object Oriented Programming System (OOPS).	CO 1	Understand
	b	AITB01.01	Describe the Features of Python, Data types.	CO 1	Understand
2	a	AITB01.02	Summarize the concept of Operators, Input and output, Control Statements.	CO 1	Remember
	b	AITB01.02	Summarize the concept of Operators, Input and output, Control Statements.	CO 1	Understand
3	a	AITB01.06	Determine Creating a class, The Self variable.	CO 2	Understand
	b	AITB01.06	Determine Creating a class, The Self variable.	CO 2	Remember
4	a	AITB01.08	Determine types of Methods, Inheritance and Polymorphism.	CO 2	Understand
	b	AITB01.07	Understand types of variable, Namespaces.	CO 2	Understand
5	a	AITB01.11	Understand Creating strings and basic operations on strings.	CO 3	Understand
	b	AITB01.12	Analyze the concept of String testing methods, Defining a function.	CO 3	Understand
6	a	AITB01.13	Illustrate Calling a function, Returning multiple values from a function.	CO 3	Understand
	b	AITB01.14	Contrast the Usage of Functions are first class objects, Formal and actual arguments,	CO 3	Understand
7	a	AITB01.17	Understand Exceptions, Exception handling.	CO 4	Understand

	b	AITB01.18	Summarize the concept of types of exceptions.	CO 4	Understand
8	a	AITB01.18	Summarize the concept of types of exceptions.	CO 4	Understand
	b	AITB01.19	Discuss the Except block, the assert statement.	CO 4	Understand
9	a	AITB01.22	Apply Working with containers, Canvas.	CO 5	Understand
	b	AITB01.24	Implement Message widget, Text widget.	CO 5	Understand
10	a	AITB01.25	Illustrate Radio button Widget, Entry widget.	CO 5	Understand
	b	AITB01.24	Implement Message widget, Text widget.	CO 5	Understand

Signature of Course Coordinator **HOD, IT**