COURSE CODE (CREDITS): 18B11CI315 (3)   MAX. MARKS: 25

COURSE NAME: Python Programming with Raspberry PI

COURSE INSTRUCTORS: Vikas Baghel   MAX. TIME: 1 Hour 30 Minutes

Note: (a) All questions are compulsory.

(b)Marks are indicated against each question in square brackets.

(c)The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems.

Q1.	a)	How do you create a new Python module from scratch? Provide an example of creating a custom Python module and then importing and using it in another script?	[CO1]	[2]
	b)	Create a Python class for a "Car" with attributes like make, model, and year, Include methods to get and set these attributes.		[1]
	c)	i. How do you list the contents of a directory using a command in a shell? ii. What is the purpose of the "pwd" command, and how do you use it in a shell?		[1]
	d)	What is Leafpad Text Editor, and what is its primary purpose?		[1]
Q2.	a)	Explain the role of a web framework in web application development with Python? Name some popular Python web frameworks.	[CO3]	[2]
	b)	Explain the basic structure of a Flask application and the purpose of each component (e.g., routes, templates, static files)?		[2]
	c)	Write a simple Flask application that has two routes: one for the homepage ("/") and one for a contact page ("/contact"). When a user accesses the contact page, it should display a basic HTML form with a "Submit" button.		[3]
	d)	Create a Flask application that accepts user input via a form on a web page. The form should have a single text input field for the user's name and a "Submit" button. When the user submits the form, the application should display a new page that greets the user by name. Provide the complete code for this Flask application, including the HTML template.		[3]
Q3.	a)	How do you handle user input, such as keyboard and mouse events, in a Python game?	[CO4]	[2]
	b)	How can you add sound and music to a Python game? Are there any specific libraries for this purpose?		[2]
	c)	Write a PyGame program to draw a red rectangle on the screen. Game should handle quitting a PyGame program when the user closes the window?		[2]
	d)	Develop a simplified version of the Flappy Bird game where a bird flies in random directions with random speed in a specific given area.		[4]