

Reg. No.:



Name:

University of Kerala

W7176

Third Semester FYUGP Degree Examination, November 2025

Discipline Specific Elective

MATHEMATICS

UK3DSEMAT200 - Programming with LATEX and Python

Academic Level: 200-299

2024 Admission

Time: 1 Hour 30 Minutes(90 Mins.)

Max. Marks: 42

Part A. 6 Marks.Time:6 Minutes.(Cognitive Level:Remember(RE)/Understand(UN)) Objective Type. 1 Mark Each.Answer all questions

Qn No.	Question	CL	CO
1	Write a Python statement to create a list named 'fruits' containing "apple", "banana", and "cherry" Options : A)NA B)NA C)NA D)NA	RE	1
2	What is the function in python to find the absolute value of a number.	RE	1
3	How will you express a complex number in python programming.	UN	2
4	1. What is the use of the <code>\includegraphics</code> command in LaTeX?	UN	2
5	The LaTeX environment tabular is used to create a	UN	2
6	What will be the output of <code>int(3.8)</code>	UN	1

Part B.8 Marks.Time:24 Minutes.(Cognitive Level:Understand(UN)/Apply(AP))Short Answer. 2 marks each.Answer all questions

Qn No.	Question	CL	CO
7	Write the basic syntax of a python function.	UN	2
8	1. Produce the output for the following code : <code>print(3+5)</code> <code>print("3+5")</code>	UN	2
9	Write the LaTeX code to typeset the equation :	AP	2

Qn No.	Question	CL	CO
	$2x + 5y = 11$		
10	What is LaTeX and what is its primary use?	AP	1

Part C. 28 Marks. Time: 60 Minutes (Cognitive Level: Apply(AP)/Analyse(AN)/Evaluate(EV)/Create(CR)) Long Answer. 7 marks each. Answer all 4 Questions choosing among options * within each question

Qn No.	Question	CL	CO																		
11	A) Write the \LaTeX\ code to produce: The table below shows the sizes of the planets of our solar system. <table><tr><th>Planet</th><th>Diameter(km)</th></tr><tr><td>Mercury</td><td>4878</td></tr><tr><td>Venus</td><td>12104</td></tr><tr><td>Earth</td><td>12756</td></tr><tr><td>Mars</td><td>6794</td></tr><tr><td>Jupiter</td><td>142984</td></tr><tr><td>Saturn</td><td>120536</td></tr><tr><td>Uranus</td><td>51118</td></tr><tr><td>Neptune</td><td>49532</td></tr></table> OR B) Prepare a certificate in Latex, write the Latex code and corresponding view of pdf document and insert a logo as picture in the same	Planet	Diameter(km)	Mercury	4878	Venus	12104	Earth	12756	Mars	6794	Jupiter	142984	Saturn	120536	Uranus	51118	Neptune	49532	AP	4, 3
Planet	Diameter(km)																				
Mercury	4878																				
Venus	12104																				
Earth	12756																				
Mars	6794																				
Jupiter	142984																				
Saturn	120536																				
Uranus	51118																				
Neptune	49532																				

Qn No.	Question	CL	CO
12	A) Write the Latex Code for generating the statement below. Theorem 1.1 The sum of the angle of a triangle is 180°. An immediate consequence of the result is the following Corollary 1.1 The sum of the angles of a quadrilateral is 360° OR B) Write a program that takes a number from the user and prints whether it is positive, negative, or zero. Discuss how control flow helps in decision-making in programs	AN	4, 1
13	A) A. Compare the control flow statements if elif else ,for, while in python with examples. OR B) Create a Python program using while loop to print squares of numbers from 1 to 100. Explain how to modify it (without giving the entire code) to print cubes in the same range.	EV	2, 1
14	A) Write a Python program to find the roots of a quadratic equation $ax^2 + bx + c = 0$ OR B) (a)Write a LaTeX code to display the 4×4 diagonal matrix. (b)Write a LaTeX code to get the following output:	CR	4, 1

Qn No.	Question	CL	CO
	The determinant $\begin{vmatrix} a & b \\ c & d \end{vmatrix}$ is defined by $\begin{vmatrix} a & b \\ c & d \end{vmatrix} = ad - bc$		