U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

June 2025 Semester End Main Examinations

Programme: B.E. **Semester: IV**
Branch: Industrial Engineering & Management **Duration: 3 hrs.**
Course Code: 22IM4PCFPT **Max Marks: 100**
Course: Fundamentals of Programming Tools

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

		UNIT - I	*CO*	*PO*	Marks
1	a)	Describe the working of a sensor used to monitor heartbeats of a patient.	*CO1* *CO2*	*PO1*	**10**
	b)	What is a Solutions Engineer? Describe the roles with respect to Industrial Engineering.	*CO1* *CO2*	*PO1*	**10**
		OR			
2	a)	Describe the requirements of a Programming Tool	*CO1* *CO2*	*PO1*	**10**
	b)	Describe the working of a IR Sensor used near a heat source.	*CO1* *CO2*	*PO1*	**10**
		UNIT - II			
3	a)	Draw a neat labeled diagram of Adruino board and label all its parts.	*CO2*	*PO2*	**10**
	b)	Mention the Applications of Adruino board wrt building various devices.	*CO2* *CO3*	*PO2*	**10**
		OR			
4	a)	What are the different types of Raspberry pi boards? Draw the circuit diagram of a typical Raspberry pi board and label all its parts.	*CO1* *CO2*	*PO1*	**10**
	b)	How are Raspberry pi boards used in industries?	*CO1* *CO2*	*PO1*	**10**
		UNIT - III			
5	a)	Write a Python program demonstrating the use of the FOR loop.	*CO3* *CO4*	*PO3*	**10**

		b)	i) Explain the various features of Tuples and Lists in Python.	*CO2* *CO3*	*PO2*	**10**
			OR			
	6	a)	Write a Python program demonstrating the use of the IF-ELSE loop.	*CO3* *CO4*	*PO3*	**10**
		b)	What are the features and advantages of the Python programming language?	*CO2* *CO3*	*PO2*	**10**
			UNIT - IV			
	7	a)	Solve the equation $f(x) = x^2-49 =0$ correct to 2 decimal places using False position method, by hand calculation and Python code	*CO4*	*PO3*	**10**
		b)	Write the respective algorithm and flowchart for the above question.	*CO4*	*PO3*	**10**
			OR			
	8	a)	Solve the equation $f(x) = x^2-25 =0$ correct to 2 decimal places using False position method, by hand calculation and Python code	*CO4*	*PO3*	**10**
		b)	Write the respective algorithm and flowchart for the above question.	*CO4*	*PO3*	**10**
			UNIT - V			
	9	a)	Write a Python program for finding if the given number is odd/even	*CO4*	*PO3*	**10**
		b)	Solve the equation $f(x) = \tan(x) – 2x$ using the Simpson's 3/8 rule, by hand calculation and Python code	*CO4*	*PO3*	**10**
			OR			
	10	a)	Write a Python program for finding if the given number is a Palindrome	*CO4*	*PO3*	**10**
		b)	Write the respective algorithm and flowchart for the above question on Simpson's 3/8 rule.	*CO4*	*PO3*	**10**

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