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

Autonomous Institute Affiliated to VTU

August 2024 Semester End Main Examinations

Programme: B.E.   Semester: IV
Branch: Industrial Engineering & Management   Duration: 3 hrs
Course Code: 22IM4DCFPT   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 suitably assumed.

UNIT - I

1.	a)	What are the Differences Between a Programming Language and a Programming Tool?	**10**
	b)	What are the applications of a visual sensor in Industrial Engineering?	**10**

OR

2.	a)	What are the Fundamental Requirements of a Solutions Architect?	**10**
	b)	Explain the Importance of Solutions Engineering in the Field of Industrial Engineering	**10**

UNIT - II

3.	a)	Explain the working of the Arduino board, with the aid of a neat diagram. List the applications of the Arduino board.	**12**
	b)	How is an analog sensor interfaced in Arduino? Give necessary details supporting your answer.	**08**

UNIT - III

4.	a)	What are the types of OS which are used in Raspberry pi?	**10**
	b)	What is the firmware used in raspberry pi? List their applications.	**10**

UNIT - IV

5.	a)	Write a Python program demonstrating the use of the FOR loop.	**04**
	b)	i) Solve the equation $f(x) = x^2-64 =0$ correct to 3 decimal places using False position method.	**08**
		ii) Write the respective algorithm and flowchart for the same.	**08**

OR

6. a) Write a Python program for finding if the given number is odd/even **04**

    b)
    i) Solve the equation f(x) = tan(x) – 2x using the Simpson's 3/8 rule. **08**

    ii) Write the respective algorithm and flowchart for the same. **08**

UNIT - V

7. a) Write a programme to demonstrate the utility of Python features using the bubble sort method. **10**

    b) What are the features and advantages of the Python programming language? **10**

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