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Question Paper Code	12408
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M.E. / M.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

First Semester

M.E. - Embedded System Technologies

20PESPC104 - SOFTWARE FOR EMBEDDED SYSTEMS

(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

	<i>Marks, K-Level, CO</i>
1. Define C preprocessor.	<i>2,K1,CO1</i>
2. Recall Inline assembly.	<i>2,K1,CO1</i>
3. List out the Stages of Compilation.	<i>2,K1,CO2</i>
4. What is the use of GNU C Library?	<i>2,K1,CO2</i>
5. Define Embedded C.	<i>2,K1,CO3</i>
6. Label the need for timeout mechanism.	<i>2,K1,CO3</i>
7. Define sEOS.	<i>2,K1,CO4</i>
8. How to achieve embedding serial communication.	<i>2,K1,CO5</i>
9. Define Dictionaries.	<i>2,K1,CO6</i>
10. Write syntax for Functions.	<i>2,K1,CO6</i>

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) Explain the concept of Decision and Control Statements with examples.	<i>13,K2,CO1</i>
OR	
b) Explain list of preprocessor directives in C and types of C Preprocessors with examples.	<i>13,K2,CO1</i>
12. a) Illustrate in detail about the Stages of Compilation in C.	<i>13,K2,CO2</i>
OR	
b) Discuss the steps to detect Specific Memory Issues with Valgrind Memcheck.	<i>13,K2,CO2</i>
13. a) Explain in detail about the Basic Embedded C Programming Steps.	<i>13,K2,CO3</i>

OR

b) Describe the methods for meeting Real-time constraints using delays and timeout mechanism. *13,K2,CO3*

14. a) Identify and Discuss about the need for creating embedded operating system. *13,K2,CO4*

OR

b) Demonstrate the steps for embedding serial communication & scheduling data transmission. *13,K2,CO5*

15. a) Write a program to explain different data types in python. *13,K3,CO6*

OR

b) Write a program to handle Errors and Exceptions in python. *13,K3,CO6*

PART - C (1 × 15 = 15 Marks)

16. a) Describe in detail about GNU configure and build system. *15,K2,CO2*

OR

b) Explain in detail about important design considerations when using sEOS. *15,K2,CO4*