

[Time:2.30 Hrs]		[ Marks:75 ]
Please check whether you have got the right question paper.		
N.B:	1. All questions are compulsory. 2. Figures to the right indicate full marks. 3. Students answering in the regional language should refer in case of doubt to the main text of the paper in English.	
<b>Q1.</b>	<b>Attempt <u>any three</u> of the following.</b> a) Define embedded system. Write features of ES b) Write advantages of embedded system. c) Define Embedded System with the help of Microwave Oven as an example. d) Explain advanced memory features and architectural features of ES. e) Explain sensors and actuators. f) Write note on ASICs	<b>15</b>
<b>Q2.</b>	<b>Attempt <u>any three</u> of the following.</b> a) What is quality attribute of ES? Explain non-operational quality attribute. b) Explain domain specific automotive embedded system. c) What are the different types of Hybrid Memory? d) Explain top loading and front loading washing machine. e) What is Memory Testing? Why is it required? f) Explain interrupt Map for a printer sharing device	<b>15</b>
<b>Q3.</b>	<b>Attempt <u>any three</u> of the following.</b> a) Define addressing mode. Explain Direct addressing mode. b) Differentiate Microprocessor & Microcontroller c) Explain Data Types & Time Delay uses in 8051? d) Draw Block diagram of 8051 with important I/O Pins e) List the features of 8051? f) Explain register banks used in 8051.	<b>15</b>
<b>Q4.</b>	<b>Attempt <u>any three</u> of the following</b> a) Explain interfacing external data memory access b) Explain microprocessor family with details. c) Write down about ROM and its types used in ES. d) Explain Cyclic Redundancy Check. e) Explain structure of embedded program with suitable example. f) What are the basic functions of RTOS? Explain interrupt and exception handling.	<b>15</b>
<b>Q5.</b>	<b>Attempt <u>any three</u> of the following</b> a) Explain the Embedded Operating System Trends b) What is Cross- Compilation? List the files that are generated upon cross Compilation c) What is the Need for Cross Compiler? d) Explain microcontroller firmware development cycle. e) Explain disassemble / Decompiler. f) Write note on Simulator & Emulator	<b>15</b>

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