



III B.Tech II Sem Regular End Examination, June 2022

Introduction to Embedded Systems
(Information Technology)

Time: 3 Hours.

Max. Marks: 70

Note: 1. Question paper consists: Part-A and Part-B.

2. In Part – A, answer all questions which carries 20 marks.

3. In Part – B, answer any one question from each unit.

Each question carries 10 marks and may have a, b as sub questions.

PART- A**(10*2 Marks = 20 Marks)**

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|-------|---|----|-----|-----|
| 1. a) | Define an Embedded System? | 2M | CO1 | BL1 |
| b) | List the applications of an embedded system? | 2M | CO1 | BL1 |
| c) | What are the functions of memory? | 2M | CO2 | BL1 |
| d) | What is the difference between sensors and actuators? | 2M | CO2 | BL1 |
| e) | How do you write an embedded C program? | 2M | CO3 | BL1 |
| f) | What is Firmware in embedded systems | 2M | CO3 | BL1 |
| g) | List the features of RTOS. | 2M | CO4 | BL1 |
| h) | What is Task scheduler? | 2M | CO4 | BL1 |
| i) | Write a note on Disassembler/Decompiler | 2M | CO5 | BL1 |
| j) | List the debugging tools used in an embedded system | 2M | CO5 | BL1 |

PART- B**(10*5 Marks = 50 Marks)**

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|------|---|----|-----|-----|
| 2 a) | Explain any three purpose of Embedded Systems | 5M | CO1 | BL4 |
| b) | Write the characteristic of Embedded Systems | 5M | CO1 | BL1 |

OR

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|------|--|-----|-----|-----|
| 3 | What is operational quality attributes? Explain the important operational quality attributes to be considered in any embedded system design. | 10M | CO1 | BL4 |
| 4 a) | What are the different types of memories used in Embedded System design? Explain the role of each. | 5M | CO2 | BL4 |
| b) | Briefly explain about sensors and actuators. | 5M | CO2 | BL4 |

OR

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|---|---|-----|-----|-----|
| 5 | Explain about core of the embedded system | 10M | CO2 | BL4 |
|---|---|-----|-----|-----|

- 6 a) What are the steps required to develop Embedded Firmware? 5M C03 BL1
b) List out the advantages of assembly language based embedded firmware development. 5M C03 BL1
- OR**
- 7 Explain the different embedded firmware design approaches in detail. 10M C03 BL4
- 8 a) What is operating systems and list the different types of operating systems. 5M C04 BL1
b) Explain the architecture of device driver and give applications of device drivers 5M C04 BL4
- OR**
- 9 Explain the different task communication synchronization issues encountered in inter process communication. 10M C04 BL4
- 10 a) Explain the terms (i) Emulator (ii) Simulator. 5M C05 BL4
b) List the different files generated during the cross compilation? 5M C05 BL1
- OR**
- 11 Explain the role of IDE for embedded software development. 10M C05 BL4

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