



III B. Tech II Sem Supply End Examination, January 2023

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) | What are the various classifications of embedded systems? | 2M | C01 | BL |
| b) | What is operational quality attributes? | 2M | C01 | BL |
| c) | List the typical components of embedded system? | 2M | C02 | BL |
| d) | Give few examples of embedded systems | 2M | C02 | BL |
| e) | What are the languages used in embedded system? | 2M | C03 | BL |
| f) | List the various methods available for developing the embedded firmware. | 2M | C03 | BL |
| g) | What is the need of task communication? | 2M | C04 | BL |
| h) | How does the scheduler know when a task has become blocked or unblocked? | 2M | C04 | BL |
| i) | Define the terms (i) Compiler (ii) Cross compiler. | 2M | C05 | BL |
| j) | What is the use of IDE in programming? | 2M | C05 | BL |

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

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|------|---|----|-----|----|
| 2 a) | Explain the difference between Embedded Systems and General Computing Systems | 5M | C01 | BL |
| b) | Briefly Explain about History of embedded systems | 5M | C01 | BL |

OR

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|------|--|-----|-----|----|
| 3 | Explain the various purposes of embedded systems with illustrative examples. | 10M | C01 | BL |
| 4 a) | What is sensor? Explain its role in embedded systems give some examples? | 5M | C02 | BL |
| b) | Write a note on different types of memories in embedded systems. | 5M | C02 | BL |

OR

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|---|---|-----|-----|----|
| 5 | Explain about different communication interfaces in embedded Systems? | 10M | C02 | BL |
|---|---|-----|-----|----|

- 6 a) What is Embedded Firmware development? Why C is used rather than C++ in Embedded systems. 5M C03 BL
b) What is the use of Firmware? Which programming Language are commonly used to create firmware? 5M C03 BL

OR

- 7 Explain about design and development of Embedded Product with example. 10M C03 BL

- 8 a) Explain the different multitasking models in the operating system context. 5M C04 BL
b) Explain the architecture of device driver with neat sketch and give the applications of device drivers. 5M C04 BL

OR

- 9 Discuss the different issues to be considered in designing an Embedded System in RTOS environment. 10M C04 BL

- 10 a) State the uses of assembler and disassembler in embedded application development. 5M C05 BL
b) Explain about integration of embedded Hardware and Firmware. 5M C05 BL

OR

- 11 What are the different techniques available for embedded firmware debugging? Explain them in detail. 10M C05 BL

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