

AQ – 2899

Second Semester M. E. (Comp. Sci. and IT) Examination

REAL-TIME EMBEDDED SYSTEM

Paper - 2 RNME 1

P. Pages : 3

Time : Three Hours]

[Max. Marks : 80

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- Note :** (1) Assume suitable data wherever necessary.
(2) Diagrams should be given wherever necessary.
(3) Illustrate your answer wherever necessary with the help of neat sketches.
(4) Use pen of Blue/Black ink/ refill only for writing the answer book.

1. (a) List the different types of memories and explain their differences. 7
(b) Draw and Explain the Layered architecture of Embedded system. 7

OR

2. Draw and Explain the Hardware Architecture of an Embedded System in detail. 14

3. (a) What is code optimization ? Explain the guidelines of it. 6
(b) Explain the Waterfall model alongwith its building blocks. 7

OR

4. (a) Draw and Explain the process of configuration management in an Embedded System. 7
(b) Describe a various productivity tools to develop a software. 6
5. (a) Draw and Explain the Architecture of 8051 family microcontroller. 7
(b) What is UART ? Explain NULL modem cable connection with its pin connectors. 6

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OR

6. (a) Explain the protocol Architecture of Infrared Interface. 7
(b) Explain the broad specifications of Bluetooth standards. 6
7. (a) Explain the following algorithms :—
(i) Preemptive multitasking.
(ii) Non-preemptive multitasking. 7
(b) What is semaphore ? Explain how it can be used for intertask synchronization. 7

OR

8. (a) Explain the priority inversion problem alongwith priority inheritance. 7
(b) What is task scheduling ? Explain the states of a task in an Embedded System. 7
9. (a) Draw and Explain the IP-phone Hardware Architecture. 6
(b) What is the utility of Navigation of system ? Explain the various fields of GPS receiver packet. 7

OR

10. (a) List the various features of Linux. Explain the directory commands with an examples. 6
(b) Draw and explain the data packet and file name packet for ethernet and Serial Communication in project overview of protocol convertor. 7
11. (a) Explain the following :—
(i) Time domain analysis of digital signals.
(ii) Frequency domain analysis of signals. 7

- (b) What are the advantages of C++ over C ? Also describe an important features of Embedded C++. 6

OR

12. (a) What is RF tag ? Explain the mechanism to develop an attendance system in an organisation. 7
- (b) What is the use of filtering in DSP ? List and explain its various types. 6



