Code: 9A02806

1

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

EMBEDDED SYSTEMS

(Electrical and Electronics Engineering)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 (a) Explain issues in embedded software development.
(b) Explain types of embedded systems.

2 (a) With neat diagram explain basic architecture of general purpose processor.
(b) What are the key factors involved in selection of memory for an embedded system?

3 (a) What is the need for communication interfaces in embedded system?
(b) Explain about RS-232 communication parameters.

4 (a) Explain interrupt service dead line.
(b) What is the need of device drivers for an embedded system?

5 List the program elements and explain clearly.

6 Explain software management and maintenance.

7 (a) Explain the verification of hardware/software co-design.
(b) Explain issues in an embedded system design.

8 What are the rules to be followed by the interrupt routines in RTOS? Why?

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2

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

EMBEDDED SYSTEMS

(Electrical and Electronics Engineering)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

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1 Discuss the issues that arise while developing embedded software. Write important applications of embedded systems.

2 (a) What are the key factors involved in selection of processor for an embedded system?

(b) What are the constraints present in memory selection for an embedded system?

3 Why do we need timer and counter devices in embedded systems? Explain them in brief.

4 (a) Briefly explain about context and periods for context switching.

(b) Explain interrupt latency.

5 Briefly explain about program modeling concepts.

6 (a) Discuss the software algorithm concepts for an embedded system.

(b) How to test and validate an embedded system?

7 Describe the following hardware implementation tools in embedded system:

(a) ICE

(b) ROM Emulations.

(c) Logic analyzer.

8 Why do we need timer functions in RTOS? Briefly discuss how they are provided.

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3

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EMBEDDED SYSTEMS

(Electrical and Electronics Engineering)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) What is an embedded system? Write briefly about the design process.
(b) Write short notes on characteristics of embedded computing applications.

2 Write short notes on the following parts of embedded system:
(a) Processors.
(b) Memory.
(c) Interfacing.

3 (a) Explain about hardware interface to RS-232 with all its hand shake signals.
(b) Explain the features of USB.

4 (a) Briefly explain parallel and serial port drivers for an embedded systems.
(b) Explain interrupt service mechanism.

5 Explain modeling processor for software analysis.

6 Briefly explain software engineering practices for an embedded system.

7 (a) Discuss about various hardware tools that are used during system development process.
(b) Explain about hardware and software co-design.

8 Explain real time operating system task scheduling models.

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4

B.Tech IV Year II Semester (R09) Regular Examinations, March/April 2013

EMBEDDED SYSTEMS

(Electrical and Electronics Engineering)

Time: 3 hours Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

*****

1 (a) What is an embedded system? List the various applications of embedded system.

(b) Explain the classification of embedded system.

2 What is a single-purpose processor? What are the benefits of choosing a single purpose processor to against a general purpose processor?

3 (a) Discuss the need for communication of interfaces.

(b) Explain about RS-232.

4 With suitable example explain how do you:

(a) Enable the interrupt.

(b) Disable the interrupt.

(c) Set the variable.

(d) Access the stored resource.

5 Explain clearly about modeling of multiprocessor system.

6 (a) Discuss the software algorithm concepts for an embedded system.

(b) How to rest and validate the embedded system?

7 What are the tools required for developing an embedded system? Explain one of them clearly?

8 (a) Discuss the important requirements of embedded system-operating system.

(b) Briefly explain interrupt routines in RTOS.

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