B.E. Eighth Semester (Electrical & Electronics) (CGS)

10413 : Embedded Systems : 8 EX 03

P. Pages : 2 | AU - 3033

Time : Three Hours | Max. Marks : 80

Notes : 1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches.

SECTION – A

1. a) Give the detail & compare a compiler and a assembler. 7

   b) What is OSI model and TCP/IP model also compare it. 7

OR

2. a) Name and describe three of the most common byte processing schemes. 7

   b) How can embedded system standard typically be classified? 7

3. a) Name and describe two types of ISAs that fall under each of the three ISA models. 7

   b) What are the basic materials that all components on an embedded board are composed of? 6

OR

4. a) According to the von Neumann model, list and define the major components of the CPU. 7

   b) What are the types of memory that can be integrated into a processor? 6

5. a) Draw a diagram that describes how asynchronous transfer of serial data works. 6

   b) List five categories of board I/O, with two real word examples under each category. Name and describe the six logical unit into which I/O hardware can be classified. 7

OR

6. a) What is the I/O subsystem within the graphical design engines. Define and describe each engine. 7

   b) Draw and describe how synchronous transfer of serial data works. 6

SECTION – B

7. a) Explain the difference between an architecture- specific device driver and a generic device driver. Give two example of each. 7

   b) What is interrupt? Give the three main type of interrupts? 6

OR

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8.	a)	Name and describe four examples of device driver functions that can be implemented for managing memory.	**7**
	b)	Explain a level- triggered interrupt and an edge- triggered interrupts with its strength and drawback.	**6**
9.	a)	What is segmentation? What are segment addresses made up of? What type of information can be found in segment?	**7**
	b)	Name and describe four OS algorithms that can be implemented to swap pages in and out of memory.	**7**

OR

10.	a)	What is real time operating system (RTOS)? Give two examples of RTOSes.	**7**
	b)	Explain in detail processes running in Kernel mode and those running in user mode.	**7**
11.	a)	What is the process for documenting an Embedded system architecture? How can particular structure be documented?	**7**
	b)	What is debugging? List and describe four real- world examples of each type of debugging tool.	**6**

OR

12.	a)	Draw and describe the four phases of the embedded system design and development lifecycle model.	**7**
	b)	What is a preprocessor? Provide a real world example of how a preprocessor is used in relation to a programming language.	**6**

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