B.E. Eighth Semester (Electrical Engineering) (CGS)

10587 : Professional Elective-II : Embedded Systems : 8 EP 04

P. Pages : 2 | AU - 3028

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) Name and define four groups of market specific standards. Give there examples of standards that fall under each of the four market specific groups. **7**

   b) What is difference between a high level language and low level language ? Give example of each. **6**

OR

2. a) What is the purpose of GC ? Name and describe two common GC schemes. **6**

   b) Explain typical classifications of Embedded system standards. **7**

3. a) Name and describe the three most common ISA models on which architectures are based. **7**

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

OR

4. a) According to Von-Neumann model, list and describe the major components of the CPU. **7**

   b) What is an ISA ? What features does an ISA define ? **6**

5. a) List five categories of board I/O, with two real-world examples under each category. Name and describe the six logical units into which I/O hardware can be classified. **10**

   b) What is the purpose of I/O on a board ? **4**

OR

6. a) Draw a block diagram of the major components defined by serial I/O protocol. Also describe these components. **8**

   b) What is the difference between a UART & SPI ? **6**

SECTION - B

7. a) Name and describe four examples of device diver functions that can be implemented for managing memory. **8**

b) What is an interrupt ? How can interrupts be initiated ? 5

OR

8. a) Explain the Ethernet & serial device driver with its mapping. 7

b) List & describe all types of device driver functions. 6

9. a) Name and describe four OS algorithms that can be implemented to swap pages in and out of memory. 8

b) Give two examples of real- world embedded OSes that include a BSP. 6

OR

10. a) Why is POSIX : a standard implemented in Sowe OSes ? List and define four OS APIs defined by POSIX. 8

b) What is the difference between a process, thread, task ? 6

11. a) Name and describe the four phases of the Embedded system design & development life cycle model. 8

b) What is prototype ? How can a prototype be useful ? 5

OR

12. a) What is the difference between a qualitative and quantitative quality attribute approach ? 6

b) What is preprocessor ? Provide a real-world example of how a preprocessor is used in relation to a programming language. 7

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