PECS21 - Embedded System

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Notes :   1.   All questions carry marks as indicated.
          2.   Answer **any five** questions from eight questions.
          3.   Assume suitable data wherever necessary.
          4.   Illustrate your answers wherever necessary with the help of neat sketches.

1.   a)   What is an embedded system? What does the embedded system architecture consists of?   **7**

         b)   What are the different applications of embedded system? Explain in detail.   **7**

2.   a)   Explain microprocessor. How are they differ from microcontroller? Differentiate between microprocessor, and microcontrollers.   **7**

         b)   Explain application of microprocessor in Embedded system.   **7**

3.   a)   Draw and explain the architecture of AVR microcontroller.   **8**

         b)   Explain the memory organization of AVR microcontroller.   **6**

4.   a)   Explain RISC and CISC. Differentiate between them.   **8**

         b)   Explain following: **6**
              i)   Stack memory.   ii)   Instruction Execution.

5.   a)   Explain: **7**
              i)   Internal watch dog timer.   ii)   Power down modes.

         b)   Explain the interrupt structure of AVR.   **7**

6.   a)   Describe exceptions, interrupt and vector table in ARM processor.   **7**

         b)   Explain AMBA Bus protocol and state its importance in Embedded system.   **7**

7.   a)   Explain thumb architecture strategy of ARM 7 TDMI processor with its register usage.   **7**

         b)   Give two examples of ARM instructions with their applications for   **7**
              i)   Load store type instruction.
              ii) Interrupt instruction.

8.   a)   Discuss and compare between embedded system and RIOS.   **7**

         b)   What is RIOS. What are different performances measures of Real time system. Also give its properties.   **7**

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