Hall Ticket No | | | | | | | | | | | Question Paper Code: BESB11

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

M.Tech II Semester End Examinations (Regular) - May, 2019

Regulation: IARE–R18

EMBEDDED SYSTEM ARCHITECTURE

Time: 3 Hours **(ES)** **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) List and describe five different markets under which embedded systems commonly fall? Provide examples of four devices in each market. **[7M]**
   (b) Explain the instruction level parallelism with examples. **[7M]**
2. (a) List and describe two types of ISA that fall under each of three ISA models. Give four real world processors that fall under the types of ISA. **[7M]**
   (b) Write short notes on how to power the embedded hardware. **[7M]**

UNIT – II

3. (a) Discuss the hardware components of embedded system and explain. **[7M]**
   (b) What is an interrupt? Classify three main types of interrupts? Explain the various interrupt handling mechanisms. **[7M]**
4. (a) Explain different types of on-chip program memory. **[7M]**
   (b) Explain various I/O devices in detail? Mention the signals used by I/O devices for interrupting. **[7M]**

UNIT – III

5. (a) Construct and describe the memory hierarchy of an embedded system. **[7M]**
   (b) Explain the differences between level-1, level-2, level-3 cache? How do they all work together in a system? **[7M]**
6. (a) Explain board input/output that can transmit and receive data in parallel with example. **[7M]**
   (b) Briefly discuss the solutions for improving the bandwidth of main memory. **[7M]**

UNIT – IV

7. (a) Discuss what type of programming languages would introduce a component at the application layer? Explain them. **[7M]**

   (b) Give the comparison among TCP/IP, OSI models and embedded systems model with the help of diagram. **[7M]**

8. (a) Write the SMTP pseudo code implemented in an e-mail application on a client device. **[7M]**

   (b) Explain different phases in point to point protocol highlighting connection states and events. **[7M]**

UNIT – V

9. (a) Define a preprocessor? Explain with real-world example of how a pre-processor is used in relation to programming language? **[7M]**

   (b) Mention the six stages in creating architecture? Explain them. **[7M]**

10. (a) List and explain the four models under which testing techniques fall. Within each of these models what are five types of testing that can occur? **[7M]**

    (b) Explain the process for analyzing and evaluating architecture. Mention five real -world examples of each. **[7M]**

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