Hall Ticket No ☐☐☐☐☐☐☐☐☐☐   Question Paper Code: BES004

INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)
M.Tech II Semester End Examinations (Regular / Supplementary) - July, 2018
Regulation: IARE–R16
EMBEDDED SYSTEM ARCHITECTURE
(Embedded Systems)

Time: 3 Hours   **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) Explain the classification of major hardware components of embedded boards. **[7M]**
   (b) Briefly discuss examples for different types of ISA operation that can be performed on data by embedded processors. **[7M]**

2. (a) Explain different memory addressing modes of embedded processor ISA. **[7M]**
   (b) Briefly describe the architecture of superscalar ISA implementation with an example. **[7M]**

UNIT – II

3. (a) Give the comparison of Level-1 cache in the Von Neumann and Harvard processor models. **[7M]**
   (b) Briefly discuss different measures of processor performance. **[7M]**

4. (a) Explain different schemes of data storage in cache. **[7M]**
   (b) Briefly discuss the connectivity pattern among ports and device controllers on an embedded board in I/O subsystem circuitry. **[7M]**

UNIT – III

5. (a) Illustrate dynamic centralized and parallel arbitration scheme implemented by PCI bus to allow multiple bus master. **[7M]**
   (b) Briefly discuss the solutions for improving the performance of memory. **[7M]**

6. (a) Enumerate how the different signals can function for a memory read and memory write in SRAM. **[7M]**
   (b) Explain how memory controller sample circuit provide glueless interfaces to the different types of memory in the system. **[7M]**

UNIT – IV

7. (a) Write the pseudocode to demonstrates possible initial FTP connection mechanism within an FTP client application in which access control commands are transmitted to an FTP site. **[7M]**
   (b) List and explain different SMTP commands and rely codes. **[7M]**

8. (a) Explain HTTP request and response message formats. **[7M]**

    (b) Illustrate how JVM can be implemented within a system middleware and list different networking APIs in java.net package. **[7M]**

UNIT – V

9. (a) Explain the architecture business cycle of an embedded device, which influences the architecture of an embedded system. **[7M]**

    (b) Briefly discuss different guidelines for documenting the architecture. **[7M]**

10. (a) Illustrate the process of authorization and authentication tactics that could be used to allow a device to track external sources thereby increasing system security. **[7M]**

    (b) List and briefly explain different models in testing. **[7M]**

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