# R19

Set No. 1

**IV B.Tech I Semester Advance Supplementary Examinations, March – 2023**
## EMBEDDED SYSTEMS
**(Common to Electronics & Communication Engineering and Electronics & Computer Engineering)**

**Time: 3 hours**                                                                                 **Max. Marks: 75**

*Answer any FIVE Questions*
*ONE Question from Each unit*
*All Questions Carry Equal Marks*
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### UNIT I

1 a) Discuss about the structural units in embedded processor and how a processor is selected for an embedded application. [7]

  b) Draw and compare von-Neumann and Harvard architecture. [8]

(OR)

2 a) What is Actuator? Explain its role in Embedded System Design? Illustrate withan example. [7]

  b) Write the details about the embedded hardware units and devices in a system [8]

### UNIT II

3 a) Discuss about in circuit emulator and watch dog timer. [7]

  b) Discuss about Real time clock with respect to an Embedded Hardware? [8]

(OR)

4 a) Explain the Task communication of RTOS. [7]

  b) Explain the RPC and sockets of RTOS. [8]

### UNIT III

5 With a neat diagram explain the working of a DMA and mention the memory management methods. [15]

(OR)

6 a) Explain how the interrupt routines are handled by RTOS and illustrate the features of Vxworks. [7]

  b) What is ISR? explain about Interrupt servicing mechanism. [8]

### UNIT IV

7 a) Explain Task Scheduling including its scheduling Algorithms with suitable example. [7]

  b) Explain the concept of multithreading. [8]

(OR)

8 a) Explain about Laboratory instruments for testing the embedded system. [7]

  b) Write short notes on quality assurance and testing of the embedded system design. [8]

### UNIT V

9 a) Explain the testing steps on host machine. Why host system is used for most of the development? [7]

  b) What is a target system? Explain the process of loading Embedded Software intothe target system. [8]

(OR)

10 a) Explain about main software utility tool. [7]

  b) What is Quality assurance and testing of the design? Explain in detail. [8]

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