

Total No. of Questions : 8]

SEAT No. :

**P3940**

[Total No. of Pages : 2

**[5462] - 663**

**M.E. (E & TC ) (VLSI and Embedded System)**

**EMBEDDED SYSTEM DESIGN**

**(2017 Credit Pattern) (Semester - I) (504203)**

*Time : 3 Hours]*

*[Max. Marks :50*

*Instructions to the candidates:*

- 1) *Answer any five questions from total eight questions.*
- 2) *Figures to the right side indicate full marks.*
- 3) *Assume suitable data if necessary.*

**Q1) a)** List the different design metrics for the embedded systems and explain any four in detail. **[5]**

b) Draw and explain the waterfall design model for the embedded system. **[5]**

**Q2) a)** Compare the different types of Processor technologies with the help of different parameters. **[5]**

b) Compare the different types of development Platform Trends in terms of IDE, board Details and applications. **[5]**

**Q3) a)** Draw and explain the Cortex Microcontroller Software Interface Standard (CMSIS) structure of Cortex series. **[5]**

b) Write down the features of Arduino Microcontroller and discuss its IDE and applications. **[5]**

**Q4) a)** Explain the different features of LPC 1768 ARM Cortex. **[5]**

b) Explain the CAN protocol with suitable diagram and frame structure with reference to ARM M3 microcontroller. **[5]**

**P.T.O.**

- Q5) a)** What is Embedded Linux? Explain development tools required for Linux application Development. [5]
- b)** Compare the BIOS v/s Boot loader. [5]
- Q6) a)** Explain how kernel initialization and space initialization is carried out in Embedded Linux. [5]
- b)** What are the different types of device drivers? Explain any one with reference to Embedded Linux. [5]
- Q7) a)** Discuss an Automated Meter Reading (AMR) as embedded system case study with its design considerations. [5]
- b)** What is EMI/ RFI analysis? Discuss steps involved in certification and documentation of EMI/RFI. [5]
- Q8) a)** Design an embedded system for Digital Camera and explain its design and algorithm in detail. [5]
- b)** Explain testing process documentation carried out for embedded system? [5]

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