Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MCTA-302(C)/MCIT-302(D)

M.E./M.Tech., III Semester

Examination, November 2018

Embedded Systems

(Elective - IV)

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.
iii) Assuming missing data suitably.

1. a) Define a processor. And draw basic block diagram of an embedded system describe each block. 7
   b) Describe the selection criterions procedure of a processor for an embedded system. 7

2. a) What is the role of RAM and ROM in an embedded system? 7
   b) Define the following: 7
      i) Cross compiler ii) Linker
      iii) Locator iv) Loader

3. a) What is process state diagram? Explain the meaning of worst case interrupt Latency? 7
   b) Write the format of TCON and TMOD function registers and explain the significance of each bit of a register. 7

4. a) What is the difference between a counter and a timer? How can 8051 be programmed to act as timer or counter? 6
   b) Write an RTOS necessary and when is it not necessary in the embedded system. 8

5. a) Compare different software architectures used for implementing tasks in an embedded system. 7
   b) Explain message queue mechanism for inter process communication. 7

6. a) Write short note on interrupt mechanism of 8051. Also describe usage of different SFR's for control and configuration of interrupt of 8051. 7
   b) Design an embedded system to implement traffic light connal installed on a cross of a major street. Assume suitable realistic data for the design. 7

7. a) List out the activities for software-design cycle during an embedded software development process. 7
   b) Explain how the parallel ports of the device are interfaced with LCD controller. 7

8. a) What are the software tools in software and hardware implementation for embedded system? 6
   b) Write short notes on serial communication. 4
   c) List out the kernel services in an operating system. 4

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