

Embedded System Design (3 Hours) Total Marks: 80

Q. P. Code : 40469

- 1) Question no. 1 is compulsory
- 2) Solve any three from the remaining five questions.
- 3) Assume suitable additional data if necessary.

Q1) Answer the following questions. (20)

- (a) Compare CPLD/FPGA based embedded system with microcontroller based
- (b) What could be use of RTOS in an embedded system? Justify use.
- (c) Compare I2C and CAN communication protocol.
- (d) Explain blue-tooth communication protocol.

Q2)

- (a) What issues may arise due to sharing of data in an embedded system? Give an example with solution. (10)
- (b) What kind of C-programing strategies may help you lead to faster program ? (10)

Q3)

- (a) What features of Cortex-M3 are specifically useful for (i) Low power consumption (ii) Real time system (iii) RTOS support (iv) Debug support. (10)
- (b) Compare Cortex-M3, Cortex-R4 and Cortex-A8. (10)

Q4)

- (a) Interface (draw circuit diagram) of any input (error) and output interface with any microcontroller. Explain its functioning. (10)
- (b) Explain and compare any to scheduling method in RTOS. (10)

Q5) Deign a media player (audio only) for following features. (20)

- (i) Stored media
- (ii) FM player
- (iii) MP3 Encoding/Decoding processing support
- (iv) Output speaker
- (v) Display

Draw and explain using hardware and software building block required. Explain functioning using appropriate modelling method.

Q6) Write short notes on (ANY TWO) (20)

- (a) List different uCOS-II functions used for (rtos) management task.
- (b) What may be effect of longer interrupt response time on real time behaviour of system?
- (c) Present any case study which bring out advantage of ethical practice in any development.

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