

B.E. Eighth Semester (Computer Science & Engineering) (CGS)
10353 : Embedded Systems : 8 KS 02 / 8 KE 02

P. Pages : 2

Time : Three Hours



AU - 3013

Max. Marks : 80

- Notes :
1. Assume suitable data wherever necessary.
 2. Illustrate your answer necessary with the help of neat sketches.
 3. Use of pen Blue/Black ink/refill only for writing the answer book.

1. a) Explain I²C Bus and SPI Bus communication interfaces. 7
b) Explain the terms. 6
 - a) General computing systems.
 - b) Components of Imbedded system.

OR

2. a) Compare the following. 7
 - a) GPP Vs ASIP
 - b) Von-Neumann Vs Harvard Architecture.
- b) Explain application areas and purpose of Embedded system. 6
3. a) Differentiate operational quality attributes and non operational Quality attributes of Embedded system. 7
- b) Describe Embedded firmware in embedded system. 7

OR

4. a) What are factors which must be considered in selecting, microcontroller in designing embedded systems. 7
- b) Compare between "Application Specific" & " Domain specific" Embedded system. 7
5. a) Draw and explain architecture of 8051 Micro controller. 7
- b) Explain 8051 memory organization. 6

OR

6. a) Explain power consumption Vs operating frequency characteristics for an 8051 based system. Why do the characteristics curve contain offset from origin. 7
- b) Explain role of timer units in 8051 microcontroller system. 6
7. a) Describe 8051 instruction set in 8051 Microcontroller. 7
- b) Explain in brief Firm wax Design Approaches. 7

OR

8. a) Explain the terms. 7
a) Data transfer instruction.
b) Program control transfer instructions.
c) Logical instructions.
- b) Accumulator contains 01H. What will be the content of accumulator and carry flag on execution of following instruction? 7
RR A
RRC A.
9. a) Give syntax for constant declaration in embedded – C for. 6
i) Constant Data.
ii) Pointer to constant data.
iii) Constant pointer to data &
iv) Constant pointer to constant data
- b) Compare recursive and Re-entrant functions. Explain in brief dynamic memory allocation. 7

OR

10. a) Write embedded – C program to send 00-FFH to port – 1. 7
b) Explain how delay generation created in embedded C. Give example of infinite loop in Embedded C. 6
11. a) What is Task Control Block (TCB)? Explain the structure of TCB. 7
b) Explain how Real Time kernel works in RTOS. Give Concept of thread & process in RTOS. 6

OR

12. a) Explain RPC for LPC. 6
b) What interrupt handling in RTOS? Explain watchdog for task execution monitoring. 7
