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10EE665

Sixth Semester B.E. Degree Examination, Jan./Feb. 2021
Embedded System

Time: 3 hrs.

Max. Marks:100

Note: *Answer any FIVE full questions, selecting at least TWO questions from each part.*

PART – A

1 a. Mention the classification of Embedded system. Indicate features of each classification.
   (06 Marks)
   b. Discuss various types of ROM memories used in Embedded system application. (08 Marks)
   c. Explain various register of 6808. (06 Marks)

2 a. What are the various modes of operation of 6811? Discuss how the various modes can be selected. (06 Marks)
   b. With a neat diagram, discuss cordless bar code scanner. (08 Marks)
   c. Draw the circuit of sample and hold and explain the operation. (06 Marks)

3 a. Explain three approaches to interface DAC to computer. Draw relevant block diagrams.
   (10 Marks)
   b. Discuss with relevant formats AD SCR, ADCLK, ADR register of internal ADC of 6808.
   (10 Marks)

4 a. With necessary block diagram, discuss the various choices of embedded system processor.
   (10 Marks)
   b. Define the following design metrics in embedded system design
   i) NRE cost   ii) Time to prototype   iii) Unit cost   iv) Time to market   v) Flexibility.
   (10 Marks)

PART – B

5 a. Discuss advantages of using ALP and HLL for software development for Embedded system.
   (08 Marks)
   b. Explain Round Robin architecture with necessary pseudocode. Mention the advantages and disadvantages of Round Robin architecture. (12 Marks)

6 a. Discuss the advantages and disadvantages of RTOS architecture. (06 Marks)
   b. Explain function queue scheduling architecture with necessary pseudocode. (08 Marks)
   c. Discuss the three states of a task in RTOS operation. (06 Marks)

7 a. Discuss in brief classification of serial IO based on data transfer direction. (06 Marks)
   b. What do you understand by asynchronous and synchronous serial IO? (04 Marks)
   c. Explain with flowchart software debouncing of a key using Gadfly synchronism when a key is pressed and when a key is released. (10 Marks)

8 a. Explain three basic approach of interfacing multiple displays to a single 8-bit parallel port.
   (10 Marks)
   b. With necessary control signal generation, explain interface of 32KB PROM memory to 6811 processor. Draw interface block diagram. (10 Marks)

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