Reg. No. : ☐☐☐☐☐☐☐☐☐☐

Question Paper Code: 37404

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Seventh Semester

Electronics and Communication Engineering

01UEC704 - EMBEDDED AND REAL TIME SYSTEMS

(Regulation 2013)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Differentiate Von Neumann and Harvard architecture.

2. List out the two power management features provided by CPUs.

3. What is BIOS?

4. What does a linker do?

5. Define context switching.

6. What are the three conditions that must be satisfied by the re-entrant function?

7. What is the use of attached accelerator to CPU?

8. Differentiate counter semaphore and binary semaphores.

9. Define Hardware and software co-design.

10. What is PDA?

PART - B (5 x 16 = 80 Marks)

11. (a) Discuss about the requirements, specification and architectural design in the process of embedded system design.   (16)

Or

(b) Explain briefly the model train controller system. (16)

12. (a) (i) Draw a timing diagram for a write operation with no wait states. (6)

(ii) Draw and explain a timing diagram for a read operation on a bus in which the read includes two wait states. (10)

Or

(b) Draw the three structures commonly used in embedded software with programming and elaborate with an example. (16)

13. (a) (i) Describe process scheduling in detail. (8)

(ii) Enumerate the context switch mechanism for moving the CPU from one executing process to another. (8)

Or

(b) Why need multiprocessors? Analyze the performance of the system with multiple processors. (16)

14. (a) Discuss about accelerator based embedded system and network based embedded systems. (16)

Or

(b) Explain in detail about networks for Embedded Systems with an example. (16)

15. (a) Discuss about data compressor in detail with suitable diagrams. (16)

Or

(b) Write shorts notes on the following:

(i) FOSS tools for embedded system development. (8)

(ii) Personal digital assistant. (8)

37404