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**Question Paper Code: 22074**

M.E. DEGREE EXAMINATION, MAY 2014.

Second Semester

VLSI Design

01PVL204 - REAL TIME EMBEDDED SYSTEMS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. List out the characteristics of embedded computing applications.
2. Distinguish between structural description and behavioural description.
3. What is Von Neumann machine?
4. What is load-store architecture?
5. What is myrinet?
6. What is meant by scheduling?
7. What is the optimality of EDF algorithm?
8. Mention the constraints in priority driven systems.
9. Define Quality assurance.
10. What are functional and nonfunctional requirements?

PART - B (5 x 14 = 70 Marks)

11. (a) Discuss the stages involved in embedded system design process and Explain them in detail. (14)

Or

- (b) Discuss about system integration and formalism for embedded system design. (14)

12. (a) Write in detail about the memory organization and data operations of ARM processor. (14)

Or

- (b) Explain input and output devices with examples. (14)

13. (a) Discuss the need for communication analysis in network based design. (14)

Or

- (b) (i) Explain in detail about CAN bus structure and operation. (10)

- (ii) Write short notes on allocation in design. (4)

14. (a) Explain Weighted round robin and priority driven approach with examples. (14)

Or

- (b) (i) Explain Earliest deadline first Algorithm. (8)

- (ii) Explain online and offline scheduling. (6)

15. (a) Explain design methodologies for embedded computing systems. (14)

Or

- (b) Discuss the various design techniques involved in the hardware and software design of set-top boxes. (14)

PART - C (1 x 10 = 10 Marks)

16. (a) Write a C code program using ARM processor for round robin approach. (10)

Or

- (b) Write a C code program using PIC processor for the design of EDF algorithm. (10)