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Question Paper Code: 31584

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2016

Fifth Semester

Information Technology

01UIT504 – EMBEDDED COMPUTING SYSTEMS

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. List the factors that constitute the cost in an embedded system.
2. What do you mean by Busy-Wait I/O?
3. Define Clear-box testing.
4. What is the main use of a data flow graph?
5. How are processes scheduled in Rate-Monotonic Scheduling?
6. Mention the scheduling states of a process.
7. What are the goals of a design process?
8. What are the tests that should be met by a good set of requirements?
9. What do you mean by Software Defined Radio (SDR)?
10. List the functions of Digital still cameras.

PART - B (5 x 16 = 80 Marks)

11. (a) Explain in detail about the processor and memory organization, data operations and flow of control of the ARM processor. (16)

Or

(b) Explain in detail about the mechanisms that improve the overall performance of the memory system. (16)

12. (a) Explain in detail about the components for writing embedded programs. (16)

Or

(b) Write in detail about the following:

(i) Optimization of software performance. (8)

(ii) Analysis and optimization of program level energy and power. (8)

13. (a) Explain with examples the preemptive real-time operating systems. (16)

Or

(b) (i) Write a brief note on multi-rate systems. (6)

(ii) Explain in detail about inter process communication mechanisms. (10)

14. (a) (i) Write in detail about requirements analysis. (8)

(ii) Mention some advanced techniques for specification and illustrate with an application. (8)

Or

(b) (i) Explain in detail about the quality assurance mechanisms. (10)

(ii) Write a note on distributed embedded systems. (6)

15. (a) Explain in detail the specification, program and testing in a data compressor. (16)

Or

(b) Write in detail about video accelerator. (16)