Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 52928

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Seventh/Eighth Semester

Electronics and Communication Engineering

EC 6703 – EMBEDDED AND REAL TIME SYSTEMS

Common to: B.E. Biomedical Engineering/Computer Science and Engineering/ Medical Electronics.

(Regulation 2013)

(Also Common to: PTEC 6703 – Embedded and Real Time Systems–Sixth Semester – Electronics and communication Engineering – Seventh Semester –. Computer Science and Engineering (Regulation 2014))

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Compare the functions of CPU and Co-processor.
2. Define assembler.
3. What is meant by linking and loading?
4. Define embedded programming?
5. What is priority inheritance and priority inversion?
6. How does priority scheduling improve multitask execution?
7. Mention a power saving strategy adopted for real time systems.
8. Why is Benchmark Comparison done for new design?
9. List out the major components of audio player.
10. What is the need for video accelerator?

PART B — (5 × 13 = 65 marks)

11. (a) Demonstrate the challenges and performance of embedded processes for real time system design. (13)

Or

(b) Analyze the preferrance of ARM processor Instruction set over CISC processes. (13)

12. (a) Illustrate how of embedded system design is done using IDE (Integrated Development Environment). (13)

Or

(b) Compare various program validation and testing methods done for system design. (13)

13. (a) Discuss why preemptive scheduling is preferred in real time operating systems. (13)

Or

(b) Demonstrate about inter process communication mechanisms. (13)

14. (a) Analyze system design technique by giving specifications for a case study like a digital camera. (13)

Or

(b) Illustrate why MPSoCs are preferred over general purpose microprocessor. (13)

15. (a) Outline the design example telephone answering machine. (13)

Or

(b) Outline the design example of embedded control of Engine Control Unit. (13)

PART C — (1 × 15 = 15 marks)

16. (a) Evaluate the system design technique for large data analysis using video accelerator. (15)

Or

(b) Design an alarm clock using embedded systems design techniques. (15)