

B.TECH. DEGREE EXAMINATION, NOVEMBER 2014

Seventh Semester

Branch : Electronics and Communication Engineering

EC 010 705—EMBEDDED SYSTEMS (EC)

(New Scheme—2010 Admission onwards—Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. Discuss the general model of an embedded system.
2. Write a note on memory shadowing.
3. Compare 12C bus and SPI bus in terms of their performance.
4. Describe how power factor is measured in a d.c. motor.
5. Explain release time and scheduling time.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. List out the features and general characteristics of an embedded system.
7. Explain Harvard architecture in processes.
8. Write a note on data transfer in USB.
9. Explain the steps in the typical design of a position control system.
10. Discuss two examples that need real time capabilities.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. Briefly explain the applications of embedded system in any four areas of its use. (12 marks)

Or

12. Discuss in detail on embedded SoC. (12 marks)

Turn over

13. (a) What are the appropriate criteria in choosing a programming language for embedded software of a given system ?

(b) Write a note on polymorphism. (6 marks)

(6 marks)

Or

14. (a) Explain the general hardware architecture of an embedded system. (8 marks)

(b) Write a note on code optimisation. (4 marks)

15. Explain how CAW works. (12 marks)

Or

16. (a) Explain hot attachment and detachment. What are the bus protocols that support this ? (6 marks)

(b) Write a note on VDIP. (6 marks)

17. (a) Explain ADC interfacing. (8 marks)

(b) Write a note on keyboard response coders. (4 marks)

Or

18. (a) Explain watch dog timers. (8 marks)

(b) Explain how frequency of a d.c. motor can be measured. (4 marks)

19. Explain in detail, online and off-line scheduling with suitable examples. (12 marks)

Or

20. Discuss different pre-emptive methods of scheduling in an OS. (12 marks)

[5 × 12 = 60 marks]