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

Question Paper Code : 20463

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Sixth Semester

Electrical and Electronics Engineering

EE 6602 — EMBEDDED SYSTEMS

(Common to Electronics and Instrumentation Engineering/Instrumentation and Control Engineering)

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How can an embedded system be illustrated?
2. Give the purpose of Watch dog timer.
3. Classify I/O devices in embedded system.
4. Draw the write byte format and read byte format of I^2C.
5. Elucidate on data flow graph.
6. Why is state machine model essential?
7. Elucidate semaphore with a syntax.
8. How can a scheduling process be explained in real time?
9. List some evident examples of Real time embedded application.
10. What are the basic requirements while designing an embedded system?

PART B — (5 × 13 = 65 marks)

11. (a) Mention the necessary hardware units that must be present in the embedded systems.

Or

(b) Explain the various form of memories present in an embedded system.

12. (a) How is I^2C Bus described in a serial communication?

Or

(b) Elaborate the architecture of CAN with necessary sketches.

13. (a) What are the various phases involved in the embedded product cycle?

Or

(b) Give the state machine model for the seat belt alarm system.

14. (a) Explain task, process and thread with their types and examples which aids the real time system.

Or

(b) With an example describe rate monotonic scheduling.

15. (a) Describe with the help of neat block diagram, the application of embedded system in washing machine.

Or

(b) Discuss the case study on adaptive cruise control with class diagram.

PART C — ($1 \times 15 = 15$ marks)

16. (a) Design a smart card with class diagram and hardware architecture. Also draw its flowchart. (15)

Or

(b) Name and explain different phases of ELDC. Also discuss its modelling. (15)