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

Question Paper Code : 80382

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

Sixth Semester

Electrical and Electronics Engineering

EE 6602 — EMBEDDED SYSTEMS

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

(Regulations 2013)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List out the challenges in building an embedded system.
2. What are the steps involved in build process?
3. Mention the features of CAN and SPI serial interfaces.
4. Point out the purpose of Device Driver.
5. What is state machine model?
6. Write about the processes involved in Co-design.
7. Compare Preemptive and non preemptive scheduling.
8. What are the functions of RTOS?
9. List some applications of embedded system.
10. What are the events involved in the smart card application?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the possible steps are involved in build process of embedded control systems. (8)

(ii) Discuss about the Structural units in embedded processor and how a processor is selected for an embedded application. (8)

Or

(b) With a neat diagram, explain the working of Direct Memory Access (DMA). (16)

12. (a) Explain in detail about SPI communication protocol and its interfacing techniques. (16)

Or

(b) Explain with all necessary sketches to enable intra communications among peripherals using I^2C bus. (16)

13. (a) Illustrate with functional description about the different phases of Embedded Design Life Cycle model. (16)

Or

(b) Explain about the state machine model with an example of an Automatic Chocolate Vending Machine (ACVM). (16)

14. (a) Explain how the interrupt routines are handled by RTOS and illustrate the features of μC/OS-II RTOS. (16)

Or

(b) Explain in detail about the Inter process Communication and Context Switching. (16)

15. (a) With suitable diagram explain in detail about the concept of washing machine application. (16)

Or

(b) With suitable diagram explain in detail about the concept of Smart Card System application. (16)