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**Question Paper Code : 71781**

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Sixth Semester

Instrumentation and Control Engineering

EE 6602 — EMBEDDED SYSTEMS

(Common to Electrical and Electronics Engineering,  
Electronics and Instrumentation Engineering)

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the characteristics of an embedded system?
2. What are the steps involved in build process?
3. Mention few serial bus communication protocols.
4. List the features of CAN bus.
5. List the different phases of EDLC.
6. What is state machine model?
7. Define multithreading.
8. What are the functions of RTOS?
9. Draw the system components in the smart card.
10. Discuss the few applications of an embedded system.

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 In-Circuit Emulator and Watch dog Timer. (8)

Or

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

12. (a) Explain with all necessary sketches to enable intra communications among peripherals using I<sup>2</sup>C bus. (16)

Or

- (b) Explain the functionalities of RS 232 and RS 485 standard serial interface with neat diagram. (16)

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

Or

- (b) (i) Write detailed notes on software and hardware interface techniques. (8)

- (ii) Explain about sequential program model for the development of embedded platform. (8)

14. (a) Explain in detail the features and scheduling algorithm used in  $\mu$ C/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 Smart Card System application. (16)

Or

- (b) Elucidate the selection of processor and memory for any one embedded applications with suitable diagram in detail. (16)