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

Question Paper Code : 57326

B.E/B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Sixth Semester

Electrical and Electronics Engineering

EE 6602 – EMBEDDED SYSTEMS

(Common to Electronic 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 is the need of Watch dog timer ?
3. How SPI is differed from other serial interfaces ?
4. What is the need for Device Driver ?
5. Mention different models used for the development of an embedded system.
6. What are the processes involved in Co-design ?
7. Compare Preemptive and Non-preemptive scheduling.
8. Define Thread and Process.
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 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) and mention the memory management methods. **(12 + 4)**

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

OR

(b) Write short notes on :

(i) ₹ 232 Standard

(ii) CAN bus

(iii) Inter Integrated Circuit Bus. **(6 + 6 + 4)**

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

OR

(b) With a suitable example, explain about the state machine model of a Automatic Chocolate Vending Machine (ACVM) **(16)**

14. (a) Explain how the interrupt routines are handled by RTOS and illustrate the features of VxWorks. **(16)**

OR

(b) Explain the terminologies Semaphores, Mail box, pipes and Shared memory in RTOS. **(16)**

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

OR

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

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