Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : **63182**

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

Seventh Semester

Electronics and Communication Engineering

EC 1316 — EMBEDDED SYSTEMS

(Common to Computer Science and Engineering)

(Common to EC 1306 A – Embedded Systems for Fifth Semester Information Technology)

(Regulations 2008)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give the significance of embedded system.

2. Name any four processors used in embedded system design.

3. Give a brief comment on the features of I^2C Bus.

4. Specify the special applications scope of CAN.

5. How are multiple function call in cyclic order handled by the system?

6. Differentiate the function of compiler and cross compiler.

7. How does a pipe differ from a queue?

8. What is meant by priority inversion problem?

9. How will the process deadlines affect the efficiency of scheduling?

10. What is IPCS?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the classification of processors used in the embedded systems. (8)

    (ii) Explain how the software is embedded into the target system. (8)

    Or

    (b) Discuss in detail the embedded system design using SoC concept and VLSI design. (16)

12. (a) (i) Explain the design and functions of UART. (8)

(ii) Describe the specifications and use of advanced buses used in embedded systems. (8)

Or

(b) (i) Discuss the need and functions of counting devices used in embedded systems. (8)

(ii) Write the details of I^2 and CAN buses. (8)

13. (a) Explain in detail about the various programming elements of C.

Or

(b) (i) What is the need for optimization of memory in embedded programming. State the steps used for optimizing the memory in a system. (10)

(ii) List any 6 features of source code engineering tools used for embedded C/C++ programming. (6)

14. (a) (i) Discuss the services and functions of RTOS. (8)

(ii) Explain the techniques used for static task scheduling in RTOS. (8)

Or

(b) (i) With an example explain Co-operative round robin scheduling. (10)

(ii) Write notes on IPC using signals. (6)

15. (a) Explain the following functions of VX words RTOS :

(i) Time delay functions (4)

(ii) Memory allocation (6)

(iii) Queue related functions. (6)

Or

(b) Explain in detail the modules of programming with RTOS. (16)

————————