

M.E. DEGREE EXAMINATIONS: APRIL / MAY 2010

Second Semester

APPLIED ELECTRONICS

ANE506: Embedded Systems

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (10 x 2 = 20 Marks)

1. State the challenges in embedded computing system.
2. Define the various types of relationships between class and object.
3. List the various addressing modes of ARM processor.
4. What is the significance of DAG's in SHARC processor?
5. Explain the Ethernet packet format.
6. What do you mean by allocation and scheduling in embedded system design?
7. Compare Static and dynamic systems.
8. What is online scheduling?
9. List the types of task scheduling models.
10. What are the guidelines to be followed while writing an ISR?

PART B- (5 x 16 = 80 marks)

11. (a) What are embedded computers? Discuss the structural description and behavioral description of an embedded system.

(OR)

- (b) Explain the system design process of Model Train Controller.

12. (a) Discuss the memory organization of SHARC processor.

(OR)

- (b) Explain the system design process of an alarm clock.

13. (a) Describe the serial communication using I²C, CAN in detail.

(OR)

(b) (i) Explain the distributed embedded system with its architecture. (8)

(ii) Describe in detail, SHARC link ports. (8)

14. (a) Explain in detail the three scheduling approaches of real time embedded systems

(OR)

(b) Discuss the challenges in validating timing constraints in priority driven systems.

15. (a) (i) Describe various intertask communication mechanism in real time systems.

(ii) Describe the design issues of an RTOS in detail.

(OR)

(b) Write in detail various RTOS scheduling algorithms.
