Code: 9A04701

R09

B.Tech IV Year I Semester (R09) Supplementary Examinations June 2017
EMBEDDED REAL TIME OPERATING SYSTEMS
(Common to ECE, E.Con.E, EIE & CSS)

Time: 3 hours   Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

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1   (a)   How is an embedded system different from general computing system? Give brief history of embedded system.
    (b)   What is the need for actuator and explain with an example?

2   (a)   Explain the following quality attributes in the embedded system design context.
          (i) Safety.
          (ii) Portability.
          (iii) Testability and debug ability.
          (iv) Information security.
    (b)   Explain the role of programming language in hardware software co-design.

3   (a)   Explain in detail about embedded firmware design.
    (b)   Write the features of embedded C.

4   (a)   Explain in detail about multiprocessing and multitasking.
    (b)   How to choose real time operating systems? Explain key characteristics briefly.

5   (a)   Write notes on watchdog timers and real time clock.
    (b)   Write the advantages of serial and parallel communication devices.

6   (a)   Explain how to model a multiprocessor system.
    (b)   Write about DFG models with examples.

7   (a)   Write notes on memory management and IO subsystems management.
    (b)   Write the need for timer function in real-time operating system.

8   With the help of block diagram, explain the different embedded systems used in a car.

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