Code: 9A04701

R09

B.Tech IV Year I Semester (R09) Supplementary Examinations June 2016
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) Define the terms 'system' and an 'embedded system'. Give the classification of embedded systems.
   (b) With a neat sketch explain the components of embedded system hardware.

2 (a) Explain the basic elements of unified modeling language (UML).
   (b) Discuss the fundamental issues in hardware software co-design.

3 (a) Compare analog and digital electronic components.
   (b) Briefly explain about embedded firmware design approaches.

4   Explain the following:
   (a) Task scheduling.
   (b) Task communication.

5 (a) What are the functions performed by watchdog timer?
   (b) Briefly explain about serial bus communication protocols.

6   Explain in detail about DFG models.

7 (a) List the functions of a device manager.
   (b) Briefly explain about preemptive scheduling model.

8 (a) What are the requirements of smart card communication system with a host?
   (b) With a neat sketch explain the adaptive cruise control (ACC) system cycle of actions and synchronizing cycle of different units.

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