

Code: 9A02806

B.Tech IV Year I Semester (R09) Supplementary Examinations June 2017

EMBEDDED SYSTEMS

(Mechatronics)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Define embedded system. With necessary block diagram explain the components of a typical embedded system.
(b) State and explain the design metrics used in the embedded systems design.
- 2 (a) With necessary block diagram, explain the structural units in a processor which is used in an embedded system.
(b) With an example of data acquisition system for the ECG waveforms, explain memory selection in an embedded system.
- 3 (a) Give the classification of input output devices with an example for each.
(b) Distinguish between synchronous and asynchronous communication from serial devices.
- 4 (a) Explain context, interrupt latency and interrupt service deadline.
(b) What do you mean by throwing an exception? How is the exception condition during execution of a function (routine) handled?
- 5 (a) What are the criteria by which an appropriate programming language is chosen for embedded software of a given system?
(b) What are the advantages of 'functions'? How does a macro differ from a function?
- 6 (a) State the different testing and debugging tools used to test an embedded system.
(b) State and explain various steps involved in software implementation for an embedded system.
- 7 (a) Discuss various issues in hardware-software design and co-design.
(b) With necessary block diagrams, explain an emulator and in-circuit emulator (ICE).
- 8 (a) What is a kernel? Explain the kernel services in an operating system.
(b) State and explain the services provided by the real time operating systems.
