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**CSH 404**

**First Semester M.Sc. Degree Examination, Dec. 2018/Jan. 2019**  
**COMPUTER SCIENCE**  
**Embedded Systems**

Time : 3 Hours

Max. Marks : 70

**Note** : Answer **any five** questions. **All** questions carry **equal** marks.

1. a) Define an embedded system. Explain the main components of an embedded system. 8
- b) What are the advantages offered by an FPGA and ASIC for designing an embedded system ? 6
2. a) Briefly explain hardware components of an embedded system. 8
- b) Define design metrics in embedded systems. What are the different competing design metrics ? 6
3. a) Explain the need of watchdog timer and reset timer. 6
- b) With a block diagram explain the process of converting a C program into the file for ROM image. 8
4. a) Discuss the data transfer using serial ports. 8
- b) Discuss the following 6
  - i) Wireless Device
  - ii) Real Time Clock.
5. a) What are interrupts ? Briefly explain interrupt servicing mechanism. 8
- b) Discuss the following 6
  - i) Interrupt Latency
  - ii) Interrupt service deadlines.

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- 6. a) Explain the characteristics of functions of ISR's and tasks. **8**
  - b) Explain data flow model. **6**
  - 7. Discuss the following. **14**
    - i) Round robin time slicing scheduling model.
    - ii) Preemptive scheduling model
  - 8. a) Why do we use host system for most of the development ? What are the software tools needed at the host ? **8**
  - b) Explain the use of the following hardware tools.
    - i) Monitor
    - ii) ICE **6**
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