

**M. SC. (COMPUTER SCIENCE) SEM – II (CHOICE BASED
CREDIT & GRADE SYSTEM) : WINTER - 2017**

SUBJECT : ELECTIVE : b) EMBEDDED COMPUTING

Day : Monday
Date : 30/10/2017

W-2017-0826

Time 03.00 PM TO 06.00 PM
Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
 - 2) Figures to the right indicate **FULL** marks.
 - 3) Draw neat and labeled diagrams **WHEREVER** necessary.
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Q.1 Explain the various steps involved in Embedded System development process. **(15)**

OR

Explain the following applications of embedded system : **i)** Digital audio player **ii)** Data communication **iii)** Hand held computer **(15)**

Q.2 A) Answer any **ONE** of the following: **(08)**

- a) Draw and explain block diagram of UART.
- b) Draw block diagram of global positioning system receiver and explain its working.

B) Answer any **ONE** of the following: **(07)**

- a) Draw functional blocks of the hardware architecture of an embedded system and explain any two blocks in detail.
- b) Explain the role of task scheduler in embedded system.

Q.3 Answer any **THREE** of the following: **(15)**

- a) Write a short note on Real Time Operating System.
- b) Draw a neat block diagram of 8051 microcontroller and explain function of any two blocks.
- c) Explain bluetooth hardware module with neat diagram.
- d) Draw a block diagram of DMA controller and explain function of its various blocks.
- e) Explain various steps involved in interrupt process.

Q.4 Write short notes on any **FIVE** of the following: **(15)**

- a) IEEE 1394 communication interface standard
- b) Challenges and issues in embedded software development
- c) PCI bus
- d) Data transfer instructions of 8051
- e) Embedded system development tools

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