

**M. SC. (COMPUTER SCIENCE) SEM – II (CHOICE BASED  
CREDIT & GRADE SYSTEM) : SUMMER - 2018  
SUBJECT: ELECTIVE: b) EMBEDDED COMPUTING**

Day : **Thursday**  
Date : **19/04/2018**

**S-2018-0926**

Time : **03.00 PM TO 06.00 PM**  
Max. Marks: 60

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**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** Give the classification of Embedded system in detail. Explain hardware architecture of embedded system with diagram. **(15)**

**OR**

Explain the following applications of embedded system : **i)** Biomedical systems **ii)** Control systems and industrial automations **iii)** Field instrumentation. **(15)**

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

- a) Draw block diagram of 8051 microcontroller. Explain any four blocks of it.
- b) Explain the speech recognition system using DSP.

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

- a) Explain the working of UART with necessary diagram.
- b) Explain the following process in the development of embedded system:
  - 1) Determine the requirement
  - 2) Design the system architecture.

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

- a) Explain the following: latches and buffer, crystal, reset-circuit.
- b) Draw well labelled block diagram of UART.
- c) Explain real time operating system.
- d) State and explain any five instructions of 8051 microcontroller.
- e) With neat diagram explain IrDA module.

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

- a) GPS
- b) Task scheduling in embedded system
- c) ADC
- d) Bluetooth
- e) DMA

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