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(2068)

18249(M)

B. Tech 6th Semester Examination

Advanced Microcontrollers for Embedded System (CBS)

EC-601

Time : 3 Hours www.epaper.tk Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt one question from each section (I-IV) and Section V is compulsory.

SECTION - I

1. Explain the architecture of the CORTEX series ARM. What are the features of Cortex M4? (10)

OR

2. Draw and explain the Tiva C Series block diagram (10)

SECTION - II

3. What are the systems clocks present in the tiva microcontroller? Explain them briefly. (10)

OR

4. Briefly explain about GPIO control in context to Microcontroller programming. (10)

SECTION - III

5. (a) Explain briefly about SPI Interfaces.
(b) Explain briefly about I2C Interfaces. (10)

OR

6. Briefly explain about UART protocol & interface in Tiva family. (10)

SECTION - IV

7. Design an IOT application using CC3100 for connecting sensor. (10)

OR

8. (a) Write about the various wireless and network protocols.
(b) Describe the User APIs for network and wireless applications. (10)

SECTION - V

9. Tick the most appropriate answer of the following multiple choice type questions.
- (i) Cortex-M0 processor support
(A) 36 instructions (B) 56 instructions
(C) 64 instructions (D) 89 instructions
- (ii) Most of instructions of Cortex-M3 is
A. 8bit B. 16bit
C. 32bit D. 64bit
- (iii) Processors designed for low power applications are
A. Cortex-A processors B. Cortex-M processors
C. Cortex-R processors D. ARM9E series
- (iv) SecurCore products can be found in
A. SIM cards B. SD cards
C. televisions D. energy efficient servers
- (v) Cortex-M0+ processor consist of pipeline
A. one stage B. two stages
C. three stages D. four stages

- (xiv) Which of the following are the pin efficient method of communicating between other devices?
- A. serial port B. parallel port
C. peripheral port D. memory port
- (xv) In which register does the data is written in the master device?
- (A) index register (B) accumulator
(C) SPDR (D) status register
- (xvi) How much time period is necessary for the slave to receive the interrupt and transfer the data?
- (A) 4 clock time period (B) 8 clock time period
(C) 16 clock time period (D) 24 clock time period
- (xvii) Which are the two lines used in the I2C?
- (A) SDA and SPDR (B) SPDR and SCL
(C) SDA and SCL (D) SCL and status line
- (xviii) Which pin provides the reference clock for the transfer of data?
- (A) SDA (B) SCL
(C) SPDR (D) Interrupt pin
- (xix) The time taken to respond to an interrupt is known as
- (A) interrupt delay (B) interrupt time
(C) interrupt latency (D) interrupt function
- (xx) Which of the following can improve the quality and the structure of a code?
- (A) polling (B) subroutine
(C) sequential code (D) concurrent code