Printed Pages: 02 **Sub Code:KEC-061**

Paper Id: 236666 **Roll No.** | | | | | | | | | | |

B.TECH
(SEM VI) THEORY EXAMINATION 2022-23
MICROCONTROLLERS & EMBEDDED SYSTEM

Time: 3 Hours ***Total Marks: 100***

Note: Attempt all Sections. If require any missing data, then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

(a) Explain the Block Diagram of a DAC
(b) Explain Synchronous and Asynchronous Communication System
(c) List the features of MSP 430
(d) Explain Absolute Addressing mode in MSP 430
(e) Draw the register diagram of WDT
(f) Explain the Features of RTC.
(g) Difference between RISC and CISC
(h) List the various SFR in MSP 430.
(i) Explain the operating frequency of Bluetooth
(j) List the features of Wi-fi

SECTION B

2. Attempt any *three* of the following: 10x3=30

(a) Discuss MPU 3340 ADC in detail
(b) Discuss all types of addressing modes in MSP 430.
(c) Describe the register Block Diagram in MSP 430
(d) Illustrate the process of Watchdog Timer in MSP 430
(e) Illustrate the Concept of PWM in MSP 430

SECTION C

3. Attempt any *one* part of the following: 10x1=10

(a) Explain the I2C Protocol in MSP 430.
(b) Analyze the significance NFC, Bluetooth and Zigbee.

4. Attempt any *one* part of the following: 10x1=10

(a) Explain the architecture of AVR Family.
(b) Draw the architecture of MSP 430.

5. Attempt any *one* part of the following: 10x1=10

(a) Write a program to Implement I2C
(b) Illustrate IoT applications using CC3100 user API for connecting sensor

6. Attempt any *one* part of the following: 10x1=10

(a) Explain User APIs for Wireless and Networking applications
(b) Illustrate the block diagram of comparator in MSP 430 also explain its working

7. Attempt any *one* part of the following: 10x1=10

(a) Illustrate the block diagram of DMA also explain how data transfer with DMA
(b) Write a Program to implement UART.