

18 DEC. 2025 TE ELECTRICAL (SEM-VI) C SCHEME MCA QP CODE: 10096972

**Duration – 3 Hours**

**Total Marks assigned to the paper- 80**

**Note:** - (1) Question No.1 is compulsory.

(2) Attempt any **THREE** from remaining questions.

(3) Figures to the right indicates full marks

(4) Assume suitable data if required.

**Q. 1. Attempt any four questions.**

**(20 marks)**

i. Differentiate between microcontroller and microprocessor.

ii. Differentiate between interrupting and polling.

iii. Explain the status register used in Pic18 microcontroller.

iv. Explain the following special function registers

(a) Table Pointer (TBLPTR)

(b) Stack Pointer (STKPTR)

v. Explain the following assembly level instructions

a) CALL Lebel

(b) TBLRD\*+

vi. Brief the CCP module of pic microcontroller.

**Q. 2. A] What is mean by addressing modes? Explain the different addressing modes used in pic18 microcontroller.**

**(10 marks)**

**Q. 2. B] What is mean by assembler directives? Explain any seven assembler directives used in pic18 microcontroller.**

**(10 marks)**

**Q. 3. A] Describe the different instruction formats used in pic18 microcontroller.**

**(10 marks)**

**Q. 3. B] Explain the Table Read operation of pic 18 microcontroller. Also explain the instructions associated with table read operation.**

**(10 marks)**

**Q. 4. A] Write a embedded C program for Timer0 to generate a square wave of 500 Hz for the given specifications as 16-bit operation mode, Oscillator frequency of 10 MHz and Prescalor of 128. Display the output waveform on Port B pin number 7.**

**(10 marks)**

**Q. 4. B] Explain given registers used in serial communication: SPBRG, TXSTA and RCSTA.**

**(10 marks)**

**Q. 5. A] Draw and explain the Analog to digital (ADC) converter module of Pic18f4520 microcontroller and hence describe ADCON register of the same.**

**(10 marks)**

**Q. 5. B] Explain the vectored interrupt used in pic18 microcontroller and hence describe the roll of GIE and PEIE.**

**(10 marks)**

**Q. 6. Write short notes on any 02.**

**(20 marks)**

A] Stepper motor interfacing with pic microcontroller

B] DC motor interfacing with pic microcontroller

C] LCD interfacing with pic microcontroller