

Bachelor of Science (B.Sc.) Semester—VI (C.B.S.) Examination**MICROCONTROLLER****Paper—2****(Electronics)**

Time : Three Hours]

[Maximum Marks : 50

N.B. :— (1) All questions are compulsory and carry equal marks.

(2) Draw neat diagram wherever necessary.

EITHER

1. (A) Write the advantages of microcontroller based system over microprocessor based system.
Discuss Internal RAM memory organization of 8051 microcontroller. 2+8

OR

- (B) Explain I/O port organization of 8051 microcontroller. Draw generalized functional block diagram of a microcontroller. 7+3

EITHER

2. (A) Explain different logical instructions of 8051. Write a microcontroller program for masking of Lower nibble of a byte. 7+3

OR

- (B) Illustrate different addressing modes supported by 8051 microcontroller. 10

EITHER

3. (A) Discuss stack and stack pointer for 8051 microcontroller. Explain with example PUSH and POP instructions for 8051. 4+6

OR

- (B) Describe ACALL and LCALL subroutine instructions for 8051. Illustrate Nesting of Subroutine. 6+4

EITHER

4. (A) Discuss LCD module. Explain interfacing LCD with 8051 microcontroller. 4+6

OR

- (B) Describe Serial Communication of 8051 microcontroller with personal computer. How is 8051 microcontroller interfaced with DAC ? 6+4

5. Attempt any **TEN** :—

- (a) Draw bit pattern format of PSW for 8051 microcontroller.
- (b) What happens to SP when 8051 is reset ?
- (c) How many 16-bit counter/timer does the 8051 have ?
- (d) State the function of \overline{EA} control signal.
- (e) List the interrupts supported by 8051 which are generated automatically by internal operation.
- (f) Write bit pattern of interrupt enable (IE) special function register.
- (g) State the need of subroutine for 8051.
- (h) State any two branch control instruction for 8051.
- (i) Where is DJNZ instruction useful ?
- (j) What is key contact bouncing ?
- (k) Which port of 8051 microcontroller is used to blink LED ?
- (l) Give the different modes of serial data communication.

1×10