KNT/KW/16/5219

Bachelor of Science (B.Sc.) Semester—VI (C.B.S.) Examination

ELECTRONICS (Microcontroller 8051)

Compulsory Paper—2

Time : Three Hours] [Maximum Marks : 50

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

(2) Draw a well labelled diagram wherever necessary.

EITHER

1. (A) List the main features of 8051 microcontroller. Write major differences between a microprocessor and microcontroller. 6+4

OR

(B) Draw the internal architecture of 8051 microcontroller and explain each block in brief. 10

EITHER

2. (A) What are the different addressing modes supported by 8051 microcontroller and explain them. 10

OR

(B) Explain the following instructions :

(i) ADD A, Rn (ii) AJMP addr 11

(iii) ANL A (iv) CJNE

(v) DAA. 10

EITHER

3. (A) Explain the nesting of subroutines with suitable examples. What are the various branching instructions of 8051 microcontroller ? 5+5

OR

(B) Explain the stack operation of 8051. Find the time delay generated by the following program if crystal frequency = 12 MHz

```
Here MOV Ro, # 200 H
AGAIN DJNZ Ro, AGAIN
      RET.
```

5+5

EITHER

4. (A) Explain the need of ADC and DAC interfacing to microcontroller. Draw the circuit to interface DAC with microcontroller. 6+4

OR

(B) State pin configuration of 16×2 LCD Module. Discuss interfacing of LCD module 16 × 2 with microcontroller. 4+6

5. Answer any **TEN** from the following :—

(A) Give the function of PSEN in 8051.

(B) Write bitwise position of PSW in 8051.

(C) Why 8051 is called 8 bit microcontroller ?

(D) State the interrupt service subroutine location for INT1 interrupt.

(E) Explain MOV A, # 304 instruction.

(F) Explain the difference between MOV X and MOV instructions.

(G) What is the default stack location of 8051 microcontroller ?

(H) How much bit long is Stack pointer register in 8051 microcontroller ?

(I) How do we initialize stack in 8051 microcontroller ?

(J) Give the function of SCON register in 8051 serial port programming.

(K) What is Key bouncing ?

(L) What is ADC ? 1×10=10