1761

Code : 15EC42T

Register Number

MICROCONTROLLER & APPLICATIONS

Time : 3 Hours]　　　　　　　　　　　　　　　　　**[Max. Marks : 100**

Note :　(i)　Answer any **six** questions from Part – **A**.

　　　　(ii)　Answer any **seven** questions from Part – **B**.

PART – A

1. Identify to which memory location the data is moved after the execution of following program statement. **5**

   ```
   SET B   RS1
   CLR     RS0
   MOV     R1, # 25 H
   MOV     R3, # 65 H
   ```

2. Define assembly language and list any three advantages. **5**

3. List the addressing modes supported by 8051 and explain any one of them. **5**

4. List the advantages of embedded C. **5**

5. Explain the bit structure of IP register. **5**

6. List the steps involved in serial data transmission. **5**

7. Explain the operation of counter 0 in mode 1. **5**

8. List the pins of alphanumeric LCD module which help in interfacing with microcontroller. **5**

9. Write the schematic for interfacing ADC 0804 to 8051 microcontroller. **5**

PART – B

10. (a) Compare the features of RISC & CISC.   5

    (b) List any five applications of 8051 µC.   5

11. Explain the internal RAM organization of 8051 microcontrollers.   10

12. (a) Write an ALP to convert ASCII to hexadecimal.   5

    (b) Write an ALP to transfer a block of data from internal RAM location
         60 H to 70 H.   5

13. (a) Write a 8051 C program to convert ASCII into unpacked BCD & send it to Pl.   5

    (b) Differentiate between assembler instructions & assembler directives.   5

14. (a) Write C statement to toggle the content of Pl.   5

    (b) Write a C program to output the checksum byte for 4 bytes of data 62 H, 75 H,
         68 H & 53 H on port P2.   5

15. (a) Explain different memory models available in 8051 C.   5

    (b) Explain different data types available in 8051 C.   5

16. Write schematic, algorithm and a program for 8051 to sense the push button switch &
    accordingly control the ON/OFF state of LED.   10

17. (a) List the interrupts of 8051 & their vector locations.   5

    (b) Explain the method of enabling only timer interrupts & disabling others.   5

18. Explain the structure of SCON reg.   10

19. Write the schematic, algorithm & a program to interface DC motor to 8051 and run
    the motor with 35% duty cycle.   10