



MBT-003-027602 Seat No. _____

M. Sc. (ECI) (Sem. VI) (CBCS) Examination

April / May - 2018

Basic Microcontroller & Interfacing : Paper - 22

Faculty Code : 003

Subject Code : 027602

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

1 Answer the following questions in brief : (Any **Seven**) **14**

- (1) What are various variants available of 8051 family?
- (2) What is role of register B in 8051 ?
- (3) Explain SWAP instruction.
- (4) Write an assembly program to read status of P1.2 and write its 'complement to P2.1.
- (5) Enlist interrupts available with 8051. Explain any one.
- (6) What is DPTR register? Explain its role.
- (7) Write an assembly program to get value x from PO and y from P1 and return $(x + y)$ to P2.
- (8) Describe MOVC instruction.
- (9) Write an assembly program to read a BCD number from PO and write equivalent binary to P1.
- (10) Enlist all timer modes of 8051.

2 Attempt any **two** of the following questions : **14**

(Each 7 Marks)

- (1) Draw the block diagram of 8051 and explain each block in not more than 5 lines.
- (2) Write a note on I/O port pins and their functions.
- (3) Write a detailed note on unconditional and conditional jumps available with 8051.

- 3** Answer the following questions :
- (1) Explain various addressing modes available in 8051. **5**
 - (2) Explain bit related instructions. **5**
 - (3) Write an assembly program to generate a square wave of 1kHz on pin P1.0. (XTAL=22MHz) **4**

OR

- 3** Answer the following questions :
- (1) Write a note on external data and code transfer instructions. **5**
 - (2) Explain mode 0 programming of serial communication in 8051. **5**
 - (3) Write a note on PSW register of 8051. Explain all bits of it. **4**
- 4** Answer the following questions :
- (1) Enlist all logical instructions and explain. Also explain all possible addressing modes supported for them. **5**
 - (2) Explain concept of register banks in 8051. **5**
 - (3) Explain difference between LCALL and ACALL. **4**
- 5** Answer any **two** of the following questions : **14**
(Each 7 Marks)
- (1) Describe in detail the stack of 8051 and call, push & pop operations. Also explain its limitation and conflicts.
 - (2) Write a detailed note on all data transfer instructions available with 8051.
 - (3) Enlist various timer modes of 8051 and explain any two in detail.
 - (4) Enlist and explain various data types and assembler directives for 8051.