

G 1455

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, MAY 2016**

**Sixth Semester**

Branch : Electrical and Electronics Engineering

EE 010 605—MICROCONTROLLERS AND EMBEDDED SYSTEMS (EE)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

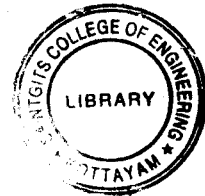
Maximum : 100 Marks

**Part A**

*Answer all questions.*

*Each question carries 3 marks.*

1. How are stacks accessed in 8051 ?
2. Explain the following instructions :
  - (a) DA.A.
  - (b) DJNZ R1, rel.
3. What are the important handshaking signals in RS 232 ?
4. How can a DAC be interfaced to 8051 ?
5. Explain various reset conditions of 16F877.



(5 × 3 = 15 marks)

**Part B**

*Answer all questions.*

*Each question carries 5 marks.*

6. Compare and contrast microcontrollers and microprocessors.
7. Explain with examples the bitwise logic operators in 8051.
8. List advantages of serial communications.
9. Show a simple keyboard interface with a port of 8051 and explain its operation.
10. Discuss the memory organization of PIC 16 F877.

(5 × 5 = 25 marks)

Turn over

**Part C**

*Answer all questions.*

*Each question carries 12 marks.*

11. With neat diagram, explain the internal architecture of 8051 microcontroller.

*Or*

12. Explain the functions of the various internal registers used in 8051.

13. Write an ALP to realize an exclusive or gate. Assume P1.0 and P1.1 as inputs and P 2.0 as output bit.

*Or*

14. With relevant figure, write the sequence of events that occur in 8051 when CALL and RET instructions are executed. Explain the different ranges associated with CALL instructions with egs.

15. What are edge triggered interrupts? How to set INTO as level triggered and INT1 as edge triggered interrupt? Explain with the help of SFR related to it.

*Or*

16. Explain in detail how timers are used as counters in 8051.

17. Explain with diagram how an LCD is interfaced to 8051.

*Or*

18. With schematic and timing diagram, explain the interfacing of a standard 8 bit ADC to 8051.

19. Describe the various modes of operation of timer 1 in P1C16F877.

*Or*

20. With neat diagram, explain the architecture of P1C16F877.

(5 × 12 = 60 marks)

