

**DIPLOMA IN ELECTRONICS AND
COMMUNICATION ENGINEERING (DECVI)/
ADVANCED LEVEL CERTIFICATE COURSE IN
ELECTRONICS AND COMMUNICATION
ENGINEERING (ACECVI)**

Term-End Examination

December, 2011

BIEL-031 : MICROCONTROLLER

Time : 2 hours

Maximum Marks : 70

Note : Attempt any five questions. Question No. 1 is compulsory. All questions carry equal marks.

1. Attempt the following objective type questions : 7x2=14

(a) 8085 microprocessor is having address lines :

(i) 8

(ii) 16

(iii) 32

(iv) None

(b) CPU stands for :

(i) Central Processing Unit

(ii) Control Processing Unit

(iii) Control Power unit

(iv) None

(c) The 8051 microcontroller has :

(i) 32 I/O ports (ii) 16 I/O ports

(iii) 8 I/O ports (iv) None

(d) CISC stands for complex Instruction set computers. [True/False]

- (e) The size of the stack pointer in 8051 microcontroller is 16 bit. [True/False]
 - (f) The description of ANL A, Rn is AND register to accumulator. [True/False]
 - (g) Almost all the microcontrollers have similar features but differ in internal ROM and RAM. [True/False]
2. (a) Explain the process of device selection and data transfer in microprocessor. Also explain handshaking. 7x2=14
- (b) Differentiate between interrupt driven data transfer and direct memory access.
3. Draw the block diagram of 8085 and explain the function of each block. 14
4. (a) Compare microprocessor and microcontroller in detail. 7x2=14
- (b) What are the RISC and CISC processors ?
5. (a) What is the function of following 8051 pins ? 7x2=14
- (i) ALE
 - (ii) \overline{EA}
 - (iii) \overline{PSEN}
 - (iv) XTAL₂
- (b) Explain the general purpose registers of microcontroller system 8051.

6. (a) What do you mean by the term addressing Modes ? What are the different addressing modes supported by 8051 ? 7x2=14
- (b) Describe the given instructions.
- (i) MOV A, # data
 - (ii) SUBB A, @ Ri
 - (iii) XCHD A, @ Ri
 - (iv) CPL C
7. (a) What are the functions of Assembler ? Explain ORG and DB in 8051. 7x2=14
- (b) Explain editor, assembler and linker used in microcontroller system 8051 program.
8. Write shorts on *any four* : 3½x4=14
- (a) Software simulators of 8051.
 - (b) Internal and external data memory of 8051.
 - (c) PSW.
 - (d) Atmel Microcontrollers.
 - (e) Development of Microcontroller.
 - (f) Polled data transfer technique.
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