

01120

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

**Term-End Examination  
June, 2013**

**BIEL-031 : MICROCONTROLLER**

*Time : 2 hours*

*Maximum Marks : 70*

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**Note :** *Attempt any five questions. Each question carry equal marks. Question no. 1 is compulsory.*

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1. Attempt all questions - each carries two marks.  
Choose the correct answer from the given options : 7x2=14
- (a) The interrupt with highest priority is :
    - (i) RST 7.5
    - (ii) RST 6.5
    - (iii) TRAP
    - (iv) None of these
  - (b) In 8031, RAM capacity is :
    - (i) 128 bytes
    - (ii) 256 bytes
    - (iii) 4K bytes
    - (iv) 0K bytes
  - (c) A microcontroller has on chip I/O ports :  
(TRUE/FALSE)

- (d) Number of address line needed to access 64 KB RAM :
- (i) 14
  - (ii) 15
  - (iii) 16
  - (iv) 18
- (e) In 02H instruction belongs to :
- (i) Immediate addressing mode
  - (ii) Direct addressing mode
  - (iii) Indexed addressing mode
  - (iv) Indirect addressing mode
- (f) 8051 is a :
- (i) 8 bit microcontroller
  - (ii) 16 bit microcontroller
  - (iii) 32 bit microcontroller
  - (iv) 10 bit microcontroller
- (g) PUSH and POP instruction in 8051 is always used in :
- (i) Register addressing
  - (ii) Immediate addressing
  - (iii) Direct addressing
  - (iv) (i) and (iii) both

2. (a) Draw and explain the internal RAM structure of 8051. 07
- (b) Explain with example addressing modes of 8051. 07

3. (a) What do you mean by the software simulation of 8051 ? What are the various development tools needed for testing and development of microcontroller boards ? 08
- (b) (i) How RETI and RET instruction differ ? 3+3=6
- (ii) Enlist all the instructions that use stack memory.
4. (a) Explain the format of a PSW register and discuss the difference between overflow flag and carry flag. 07
- (b) What is the need and advantage in having provision for both external and internal program memories ? Explain the function of MOVC and MOVX instruction. 07
5. (a) List the SFRs associated with the following functions : 08
- (i) Timer /Counter
- (ii) Interrupt
- (iii) I/O ports
- (iv) serial communication
- (b) Explain the operating modes of 8255 IC. 06

6. (a) How D to A converter is interfaced with 8085 microprocessor ? Explain with diagram. 07
- (b) List the different assembler directives and explain their meanings. Why are such directives needed ? 07
7. (a) What are the functions of the assembler and linker ? 07
- (b) Compare the features of 8155, 8355 and 8755. 07
8. Write short notes on *any four* : 3.5x4=14
- (a) Boolean processors
- (b) Data transfer techniques
- (c) SPJ systems
- (d) EEPROM and FLASH memory
- (e) Power saving options in 8051.
- (f) Commercial microcontroller devices.
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