

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2019
(First Semester)

Branch - APPLIED ELECTRONICS

8-BIT MICROCONTROLLER

: Three Hours

Maximum : 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 x 1 = 10)

- 1 What is the abbreviation of PIC?
(i) Peripheral Interface Controller (ii) Phase Interrupt Controller
(iii) Programming Interrupt Controller (iv) None of the above
- 2 What is the wide operations voltage range for PIC microcontroller?
(i) 1.0 V to 5.0 V (ii) 2.0 V to 4.0 V
(iii) 3.5 V to 5.5 V (iv) 2.0 V to 5.5 V
- 3 Which flags of status registers are most likely to get affected by the single cycle increment and decrement instruction?
(i) P flags (ii) C flags
(iii) OV flags (iv) Z flags
- 4 Where is the result stored after an execution of increment and decrement operations over the special purpose registers in PIC?
(i) File register (ii) Working register
(iii) both (i) & (ii) (iv) none of the above
- 5 Which command enables the PIC to enter into the power down mode during the operation of watch dg timer (WDT)?
(i) SLEEP (ii) RESET
(iii) STATUS (iv) CLR
- 6 Which instruction is applicable to set any bit while performing bitwise operation settings?
(i) bcf (ii) bsf
(iii) both (i) & (ii) (iv) None of the above
- 7 Which operational features of PIC allows it to reset especially when the power supply drops the voltage below 4V?
(i) Built-in power - on - reset (ii) Brown - out reset
(iii) Both (i) & (ii) (iv) None of the above
- 8 Where is the exact specified location of an interrupt flag associated with analog to digital converter?
(i) INTCON (ii) ADCON 0
(iii) STATUS (iv) PC LATH
- 9 Identify the module supports both length in either of the master / slave modes.
(i) I2C (ii) RTC
(iii) ADC (iv) DAC

Cont...

- 10 Which kind of mode is favorable for MCLR pin for indulging in reset operations?
(i) Normal mode (ii) Sleep mode
(iii) Power down mode (iv) Any flexible mode

SECTION - B (35 Marks)

Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 7 = 35)

- 11 a Classify the addressing modes with examples.
OR
b Explain a brief note on STATUS register.
- 12 a Determine the operators in C language.
OR
b Illustrate control statements of embedded C.
- 13 a Produce an assembly language program for blinking of LED.
OR
b Discuss in details about propriety of interrupts.
- 14 a Analyze the register related timers.
OR
b Sketch and explain the block diagram of timer functions.
- 15 a Explain about keypad interface with PIC.
OR
b Sketch and discuss about opto isolator interface.

SECTION - C (30 Marks)

Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Analyze the following :
(i) Arithmetic instructions (ii) Logical instructions
- 17 Design an assembly language program for 16-bit multiplication.
- 18 Elucidate the I/O port lines with neat block diagram.
- 19 Describe the working of multichannel ADC interface with suitable program.
- 20 Design DC motor interface circuit with PIC micro controller.

Z-Z-Z

END