**PSG COLLEGE OF ARTS & SCIENCE**
(AUTONOMOUS)

**MSc DEGREE EXAMINATION DECEMBER 2018**
(First Semester)

Branch - **APPLIED ELECTRONICS**

**8-BIT MICROCONTROLLER**

Time : Three Hours Maximum : 75 Marks

**SECTION-A (10 Marks)**
Answer ALL questions
**ALL** questions carry **EQUAL** marks (10 x 1 = 10)

1 Match the correct expansion of CISC.
(i) Complex Instruction Set Computing (ii) Control Instruction Source Compute
(iii) Common Institute of Science (iv) None of the above

2 What is the wile 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 What is the file extension that is loaded in a microcontroller for executing any instruction?
(i) .doc (ii) .c
(iii) .txt (iv) .hex

4 Where is the result stored after an execution of increment and decrement operations over the special registers in PIC?
(i) File register (ii) Working register
(iii) Both (i) & (ii) (iv) None of the above

5 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

6 What is USART?
(i) Uniform Synchronous Asynchronous Receiver Transmitter
(ii) United Synchronous Asynchronous Receiver Transmitter
(iii) Universal Synchronous Asynchronous Receiver Transmitter
(iv) Union of Systematic Asynchronous Receiver Transmitter

7 Which operational feature 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 Which register is used to setup the ADC Clock?
(i) ADCONO (ii) ADCON2
(iii) STATUS (iv) FILE

9 Identify the module supports both length in either of the master/slave modes.
(i) I2C (ii) RTC
(iii) ADC (iv) DAC

10 Which condition/s of MCLR pin allows to resetting the PIC?
(i) High (ii) Low
(iii) Moderate (iv) All of the above

## SECTION - B (35 Marks)

Answer ALL Questions

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

11 a Analyze the arithmetic instructions with example.

OR

b Explain a brief note on instruction format.

12 a Produce an assembly language program for 8-bit addition.

OR

b Determine the control statements of embedded C.

13 a Discuss about priority of interrupts.

OR

b Sketch the pinout diagram of PIC 16F series MCU.

14 a Explain about register related timers.

OR

b Illustrate the important of A/D conversion process.

15 a Sketch and explain the relay interface with PIC.

OR

b Discuss about keypad interface.

## SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

16 Classify the addressing modes with suitable examples.

17 Elucidate the following : (i) Data types (ii) Operators.

18 Design an assembly language program for LCD interfacing with neat diagram.

19 Analyze the timer functions with suitable diagram.

20 Design IR transmitter and receiver circuits and interface with PIC micro controller.

Z-Z-Z END