University of Mumbai

Examinations Summer 2022

Time: 2 hour 30 minutes Max. Marks: 80

Q1. (20 Marks)	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks (02 marks each)
1.	The Access Bank of PIC18 consists of _____ and _____Registers.
Option A:	General Purpose & Bank select
Option B:	General Purpose & File Select
Option C:	General Purpose & Working
Option D:	General Purpose & Special Function
2.	RLCF F, d, a For the given instruction syntax, which STATUS flag/s will get affected
Option A:	Z
Option B:	Z, N
Option C:	Z, N, C
Option D:	N
3.	PIC18 microcontroller has _____size of address bus and _____size of data bus to access Data RAM.
Option A:	8 bit, 8 bit
Option B:	12 bit, 8 bit
Option C:	16 bit, 8 bit
Option D:	21 bit, 16 bit
4.	MOVLW 00xH, MOVWF TRISC What will happen after execution of above instructions?
Option A:	Port C will act as Input Port
Option B:	Port C will act as Output Port.
Option C:	Port C will Load WREG register with 00H value
Option D:	WREG register will get loaded with the content in PORTC register.
5.	To access the program code from program memory, _____pointer is used and to access the data from program memory, _____pointer is used.
Option A:	Program Counter, Table Pointer
Option B:	Program Counter, File Select Register
Option C:	Table Pointer, File Select Register
Option D:	Table Pointer, Program counter
6.	The Analog to Digital converter of Pic18F is a _____ bit converter.
Option A:	4
Option B:	8
Option C:	10
Option D:	12
7.	To write the Command Word to Command Register of LCD, select the appropriate status to be maintained at RS and RW pin respectively.
Option A:	RS =0, RW = 0
Option B:	RS =0, RW = 1
Option C:	RS =1, RW = 0

Option D:	RS =1, RW = 1
8.	Write an instruction to Start the analog to digital conversion in ADC module of Pic18 microcontroller.
Option A:	ADCON0bits.ADON=0;
Option B:	ADCON0bits.ADON=1;
Option C:	ADCON0bits.GO=0;
Option D:	ADCON0bits.GO=1;
9.	If the SPBRG register of serial communication is loaded with 03H and the clock frequency (Fosc) is 10MHz. Select the most appropriate Baud are set by serial communication module.
Option A:	2400
Option B:	9600
Option C:	19200
Option D:	38400
10.	In PWM mode of CCP module, the associated CCP pin is set as _____.
Option A:	Input pin
Option B:	Output pin
Option C:	Clock input pin for timer
Option D:	Interrupt pin

Q2 **(20 Marks)**	**Solve any Four out of Six questions** **(05 marks each)**
A.	Explain the Status register used in Pic18 microcontroller and also explain its significance.
B	Write the differences between microprocessor and microcontroller.
C	Describe the Access Bank concept used in Pic18 microcontroller.
D	Explain the structure of Timer0 control register (T0CON) used in Timer0.
E	Explain the GIE and PEIE bits with reference to interrupt.
F	Explain stack and subroutine. Explain any one instruction associated with that.

Q3 **(20 Marks)**	**Solve any Two Questions out of Three** **(10 marks each)**
A	What is mean by addressing mode? Explain the different addressing modes used in pic18 microcontroller.
B	Describe the various special function registers used in USART module used in Pic18 microcontroller for serial communication.
C	Draw the block diagram of ADC module used in Pic18 microcontroller and hence explain the control registers associated with the same.

Q4 **(20 Marks)**	**Solve any Two Questions out of Three** **(10 marks each)**
A	Write a C program for Timer0 to generate a square wave of 100 Hz frequency at RB7 pin. Assume the oscillatory frequency (Fosc) as 10 MHz. Operate Timer0 in 16 bit mode with a prescaler of 128.
B	Describe the Compare, Capture and PWM (CCP) module of Pic18 microcontroller.
C	Write a short note on Stepper motor interfacing with Pic18 microcontroller.