University of Mumbai

Microcontroller and its applications

MCQ

Q1.	**Choose the correct option for following questions. All the Questions are compulsory and carry equal marks**
1.	The size of ROM in PIC18F458 is ---------- bytes
Option A:	2M
Option B:	1M
Option C:	4M
Option D:	8M
2.	In PIC 18FXXX microcontroller, PIC stands for _____ and F stands for ____.
Option A:	Programmable interface controller , Fast
Option B:	Peripheral Interface controller, Flash
Option C:	Peripheral Interface Controller, Fairchild
Option D:	Peripheral Interrupt controller, FSR
3.	A microcontroller basically has one of this PIPELINING feature compared to microprocessor
Option A:	Typically single-cycle/two-stage pipeline
Option B:	Typically Three-cycle/FOUR-stage pipeline
Option C:	Typically Five-cycle/SIX-stage pipeline
Option D:	Typically seven-cycle/eight-stage pipeline
4.	Which feature prevents an endless loop hanging condition of PIC along with its own on-chip RC oscillator by contributing to its reliable operation?
Option A:	Power-Up Timer (PWRT)
Option B:	Oscillator Start-Up Timer (OST)
Option C:	Watchdog Timer (WDT)
Option D:	Configuration Timer (CT)
5.	Which register can be used as a scratch pad register?
Option A:	STKPTR
Option B:	WREG
Option C:	FSR
Option D:	BSR
6.	In status Register, _____ bit is set when answer is 0 after executing the instructions.
Option A:	D0
Option B:	D1
Option C:	D2
Option D:	D3
7.	To access the data on the stack, the user needs to load the ----- bit value to the STKPTR register.
Option A:	8
Option B:	5

Option C:	3
Option D:	4
8.	Which of the following is a bit-oriented instruction?
Option A:	ADDLW 55H
Option B:	MOVLW 55H
Option C:	BSF STATUS, C
Option D:	CLRF STATUS
9.	The CALL instruction is _____ instruction.
Option A:	1 word
Option B:	2 word
Option C:	2 Byte
Option D:	1 Byte
10.	'-16H' is represented in PIC18F as ----
Option A:	AB
Option B:	BC
Option C:	CE
Option D:	EA
11.	IF ADON bit of ADCON0 register of ADC module is 1 then, _____.
Option A:	A/D conversion is interrupted.
Option B:	A / D conversion is in progress.
Option C:	A/D feature is powered up.
Option D:	A/D part is off.
12.	The High priority interrupt vector is starts from _____ location in Program memory.
Option A:	0018h
Option B:	8000h
Option C:	1800h
Option D:	0008h
13.	The _____ register contains serial communication interrupts.
Option A:	PIR1
Option B:	TXSTA
Option C:	T1CON
Option D:	T0CON
14.	Because of _____ Feature of PIC 18, it takes care of malfunctioning of program.
Option A:	Pipelining
Option B:	Watchdog timer
Option C:	High frequency Crystal oscillator
Option D:	Harvard architecture.
15.	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.
16.	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
17.	The A/D of PIC18F is a ------- bit converter
Option A:	8
Option B:	4
Option C:	10
Option D:	12
18.	CCPR1L is used to decide _____.
Option A:	The Baud rate in serial communication.
Option B:	The duty cycle of the PWM.
Option C:	The type of interrupt service routine vector.
Option D:	The resolution of ADC module.
19.	To which register the does the TMR0IE bit is belong?
Option A:	RCON
Option B:	INTCON
Option C:	INTCON2
Option D:	INTCON3
20.	Following is the driver IC used for interfacing DC motor with PIC18F.
Option A:	L293D
Option B:	8993
Option C:	L4047
Option D:	LM283D
21	In PIC 18 instruction cycle lasts for _____clock periods of crystal frequency
Option A:	2
Option B:	4
Option C:	8
Option D:	16
22	The PIC18F458 has _____byte of data RAM
Option A:	4K
Option B:	8K
Option C:	16K
Option D:	32K
23	PIC 18 microcontroller supports _____architecture
Option A:	Harvard
Option B:	Von-Nuemann's

Option C:	System
Option D:	Princeton
24	WDT is able to reset the processor if the _____
Option A:	program is caught in Unknown state
Option B:	Clock speed is high
Option C:	pipelining is not used
Option D:	Clock speed is low
25.	PIC18 microcontroller has _____size of data bus to access Data RAM.
Option A:	8 bit
Option B:	12 bit
Option C:	16 bit
Option D:	21 bit
26.	The Overflow flag is related to operation of _____numbers, it occupies the bit position _____in STATUS register.
Option A:	Unsigned, D1
Option B:	Unsigned, D2
Option C:	Signed, D4
Option D:	Signed, D3
27.	In PIC 18FXXX microcontroller, PIC stands for _____ and F stands for ____.
Option A:	Peripheral interface controller , Flash
Option B:	Peripheral Interface controller, Fast
Option C:	Peripheral Interface Controller, Fairchild
Option D:	Peripheral Interrupt controller, FSR
28.	ADDWF f, d, a In a given instruction syntax, the letter ‘ a ’ stand for
Option A:	Accumulator
Option B:	Arithmetic operation
Option C:	Access Bank
Option D:	Analog to digital conversion
29.	Select the appropriate op-code to be used, to copy the address of next instruction on stack.
Option A:	MOVLW
Option B:	LFSR
Option C:	CLRF
Option D:	PUSH
30.	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

31.	What is the frequency on which Timer operates, if the crystal frequency across OSC1 and OSC2 pins is Fosc ?
Option A:	Same as Fosc
Option B:	Fosc/2
Option C:	Fosc/4
Option D:	Fosc/8
32.	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
33.	Reference voltage selection in ADC module of PIC18 is decided by which of the following register?
Option A:	ADCON0
Option B:	ADCON1
Option C:	ADCON2
Option D:	T0CON
34.	Select the device from the following options for which, Global Interrupt Enable (GIE) along with Peripheral Interrupt Enable (PEIE) are needed to be set, when they are to be programmed in interrupt mode?
Option A:	Timer0 (TMR0)
Option B:	Timer1 (TMR1)
Option C:	External Interrupt 0 (INT0)
Option D:	External Interrupt 1 (INT1)
35.	In serial communication, byte of data is converted to serial using which shift register?
Option A:	Parallel in parallel out
Option B:	Parallel in serial out
Option C:	Serial in serial out
Option D:	Serial in parallel out
36.	If the SPBRG register of serial communication is loaded with 0FH and the clock frequency (Fosc) is 10MHz. Select the most appropriate Baud are set by serial communication module. (if BRGH=0)
Option A:	2400
Option B:	4800
Option C:	9600
Option D:	19200
37.	To which register the does the TMR0IE bit is belong?
Option A:	RCON
Option B:	INTCON
Option C:	INTCON2

Option D:	INTCON3
38.	Stepper Motor with the step angle of 2.5 degree has _____steps per revolution.
Option A:	180
Option B:	144
Option C:	72
Option D:	48
39.	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
40.	Write an instruction to Start 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;
41.	The CALL instruction in PIC 18F is a……. Byte instruction
Option A:	2
Option B:	3
Option C:	4
Option D:	8
42.	The instruction “MOVWF 0X40” uses ____ addressing mode.
Option A:	Register Direct
Option B:	Register Indirect
Option C:	Immediate
Option D:	Indexed ROM
43.	GIE bit belong to which register
Option A:	PIR2
Option B:	RCON
Option C:	INTCON
Option D:	PIR1
44.	In PIC18F458 port E has……. Pins.
Option A:	4
Option B:	3
Option C:	8
Option D:	5
45.	What will be the output after the execution of the following PIC 18 code? MYREG EQU 0X2 MOVLB 0X02 MOVLW 0X99

	MOVFF MYREG,1
Option A:	Value 99H is copied to Register WREG
Option B:	Value 99H is copied to RAM address 202H.
Option C:	Value 99H is copied to RAM address 002H
Option D:	Value 02H is copied to BSR register
46.	'-16H' is represented in PIC18F as ----
Option A:	AB
Option B:	BC
Option C:	CE
Option D:	EA
47.	We need Driver circuitry between microcontroller and stepper motor because_____.
Option A:	Microcontroller gives 180 degree phase shifted signal at the output.
Option B:	The voltage deliver by microcontroller is very high.
Option C:	Microcontroller does not provide sufficient current to drive stepper motor.
Option D:	Stepper motors provides serial communication for microcontroller.
48.	What is the size of TBLPTR?
Option A:	21-bit
Option B:	8-bit
Option C:	16-bit
Option D:	32-bit
49.	By "BCF STATUS,C" instruction, carry flag is ___
Option A:	Clear
Option B:	Set
Option C:	Toggle
Option D:	No Change
50.	For the LCD to recognize information at the data pins as data, ____ pin must be set to high.
Option A:	RS
Option B:	E
Option C:	RB0
Option D:	IN1
51.	To transmit a byte of data serially it must be placed in a register____
Option A:	TXSTA
Option B:	RCSTA
Option C:	RCREG
Option D:	TXREG
52.	The PWM period is set by writing to _____ register.
Option A:	RCREG
Option B:	TXREG
Option C:	PR2
Option D:	ADRESL

53.	In PIC18,instruction NEG fileReg stands for_____
Option A:	1’s Complement
Option B:	NOR Operation
Option C:	NOT Operation
Option D:	2’s Complement
54.	ECCP feature in PIC18F is _____.
Option A:	Enlarged compare capture PWM
Option B:	Enhanced compare capture PWM
Option C:	Extended compare capture PWM
Option D:	Enabled compare capture PWM
55.	In PIC18 after multiplication lower byte of result is stored in _____
Option A:	PRODH
Option B:	PRODL
Option C:	WREG
Option D:	MULLW
56.	If ADON bit of ADCON0 register of ADC module is 1 then, _____.
Option A:	A/D conversion is completed.
Option B:	A/D conversion is in progress.
Option C:	A/D conversion is OFF.
Option D:	A/D Feature is powered up.
57.	For PIC18 System of 4MHz, the time taken to execute the instruction MOVLW 55H is --- microseconds
Option A:	1
Option B:	0.5
Option C:	2
Option D:	4
58.	To identify the key press, microcontroller rotates column bits into _____flag.
Option A:	Zero
Option B:	Carry
Option C:	DC
Option D:	Negative
59.	Which of the following is a bit oriented instruction?
Option A:	ADDLW 55H
Option B:	MOVLW 55H
Option C:	BSF STATUS,C
Option D:	CLRF STATUS
60.	What is the Full form of TBLRD*
Option A:	Table Read
Option B:	Table Read with Post Increment
Option C:	Table Read with Pre Increment
Option D:	Table Write

DESCRIPTIVE QUESTIONS

1.	Explain all conditional instructions of PIC 18.
2.	Explain various CPU registers of PIC18F microcontroller.
3.	Explain stack and subroutine. Explain any one instruction associated with that.
4.	Explain LCD and Stepper motor interfacing of PIC18 F microcontroller.
5.	Draw and explain programming model of PIC18F microcontroller.
6.	Write a short note on TBLPTR and TABLAT. Write instructions related to it.
7.	Explain CCP module of PIC18F microcontroller.
8.	Explain SPBRG, TXREG, RCREG, TXSTA and RCSTA registers used in serial communication.
9.	What is mean by addressing mode? Explain the different addressing modes used in pic18 microcontroller.
10.	Explain the different assembly level instruction formats used pic18 microcontroller.
11.	Write a short note on DC motor interfacing with pic18 microcontroller
12.	What is mean by assembler directive? Explain any 05 assembler directives used in pic18 microcontroller.
13.	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.
14.	Write a short note on Stepper motor interfacing with pic18 microcontroller.
15.	Explain Status register and its significance.
16.	Explain how PIC 18 performs serial communication. Mention the registers involved in this.
17.	Build an assembly level program to multiply hexadecimal numbers 08H and A7H stored in REG 1 and REG 2 and save the result in WREG register.
18.	Write down the steps taken by PIC 18 microcontroller when an interrupt occurs.
19.	Write a short note on stack and program counter in PIC18F.
20.	Illustrate matrix keyboard interfacing with pic18 microcontroller.
21.	Illustrate DC Motor Interfacing with PIC18F with a neat diagram.