

# Yashwantrao Chavan College of Science, Karad

## Question Bank

Subject Name : Electronics Paper XV

Advanced Microcontroller: PIC

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### Q.1 Multiple Choice Questions (1 Mark each)

1. The PIC stands for \_\_\_\_\_.
  - a. Peripheral Interface controller
  - b. Peripheral integrated controller
  - c. Peripheral Instant controller
  - d. Pulse Instant Controller
2. The onchip ADC facility is occurs in the \_\_\_\_\_ series of the PIC.
  - a. PIC12XXX
  - b. PIC16XXX
  - c. PIC18XXX
  - d. All of these
3. The example of the Harvard Architecture is \_\_\_\_\_.
  - a. PIC
  - b. 8051
  - c. 8085
  - d. None of these
4. The specialty of the PIC is \_\_\_\_\_.
  - a. RISC
  - b. Harvard architecture
  - c. On chip ADC
  - d. All of these
5. The W register of the PIC is \_\_\_\_\_ bit wide.
  - a. 8
  - b. 12
  - c. 16
  - d. 32
6. If the result of the arithmetic operations is zero then \_\_\_\_\_ flag indicates it. a.
  - a. Digit carry
  - b. Overflow
  - c. Carry
  - d. Zero
7. \_\_\_\_\_ register is used for the bank switching in PIC18.

- a. BSR
  - b. W
  - c. File
  - d. All of these
8. The timer delay in the PIC is depends on \_\_\_\_\_.
- a. Crystal frequency
  - b. PIC design
  - c. Timer registers value
  - d. All of these
9. \_\_\_\_\_ flag indicates the result sign.
- a. Zero
  - b. Negative
  - c. Overflow
  - d. Digit carry
10. The time taken by CPU to execute an instruction is called as \_\_\_\_\_.
- a. Instruction cycle
  - b. Branch penalty
  - c. Pipelining
  - d. Delay
11. To set all the bits of the W register we must OR with it \_\_\_\_\_.
- a. FFH
  - b. 00H
  - c. 0FH
  - d. F0H
12. To exchange lower and upper nibble of file register \_\_\_\_\_ instruction is used
- a. DCEF
  - b. SWAPF
  - c. BRA
  - d. SETF
13. To rotate the bits of the file register left or right \_\_\_\_\_ instruction/s used.
- a. RRNCF
  - b. RLNCF
  - c. RRCF
  - d. all of these
14. For the logical ORing \_\_\_\_\_ instruction is used.
- a. IORLW
  - b. IORWF
  - c. Both IORLW and IORWF
  - d. ANDLW
15. The instruction MOVLW 0x99 is an example of \_\_\_\_\_ addressing mode

- a. Direct
  - b. Indirect
  - c. Immediate
  - d. None of these
16. \_\_\_\_\_ is/are conditional jump.
- a. BNZ
  - b. BC
  - c. BOV
  - d. All of these
17. \_\_\_\_\_ instruction is used for the return from subroutine.
- a. RCALL
  - b. RETURN
  - c. RLCF
  - d. RRCF
18. To set all the bits of the file register \_\_\_\_\_ instruction is used .
- a. ADDWF
  - b. SETF
  - c. DECF
  - d. SWAPF
19. The instruction MOVLW 0x55 is an example of \_\_\_\_\_ addressing mode
- a. Direct
  - b. Indirect
  - c. Immediate
  - d. None of these
20. The instruction BZ is from \_\_\_\_\_ group.
- a. Control
  - b. literal
  - c. Table processing
  - d. Byte oriented
21. Timer 1 of the PIC18 is \_\_\_\_\_ bit wide.
- a. 8
  - b. 16
  - c. 32
  - d. 4
22. The onchip ADC of PIC18 is \_\_\_\_\_ bit wide.
- a. 10
  - b. 12
  - c. 14
  - d. 16
23. \_\_\_\_\_ register of the timer is used for the controlling Timer 0.

- a. T0CON
  - b. TMR0H
  - c. TMR0L
  - d. All of these
24. ADCON0 is \_\_\_\_\_ bit register.

- a.
  - b.
  - c.
  - d.
  - 8
  - 10
  - 12
  - 16
25. T0CON is \_\_\_\_\_ bit register.
- a. 8
  - b. 12
  - c. 16
  - d. 32
26. To make on or off the timer 0 \_\_\_\_\_ bit of T0CON is used.
- a. TMR0ON
  - b. T08bit
  - c. T0CS
  - d. T0SE
27. To configure timer 0 in 8 bit or 16 bit \_\_\_\_\_ bit of T0CON is used.
- a. TMR0ON
  - b. T08bit
  - c. T0CS
  - d. T0SE
28. Timer 2 of the PIC18 is \_\_\_\_\_ bit wide.
- a. 8
  - b. 16
  - c. 32
  - d. 4
29. Timer 3 of the PIC18 supports only \_\_\_\_\_ bit mode.
- a. 8
  - b. 16
  - c. 32
  - d. 4
30. To select external/internal clock source \_\_\_\_\_ bit of T0CON is used.
- a. TMR0ON
  - b. T08bit
  - c. T0CS
  - d. T0SE
31. \_\_\_\_\_ bit indicates transmission is completed in serial communication.
- a. TMR0ON

- a.
  - b.
  - c.
  - d.
  - b. TXIF
  - c. RCIF
  - d. BRGH
32. \_\_\_\_\_ bit indicates reception is completed in serial communication.
- TMR0ON
  - TXIF
  - RCIF
  - BRGH
33. SPBRG is \_\_\_\_\_ bit register.
- a. 8
  - b. 10
  - c. 12
  - d. 16
34. \_\_\_\_\_ bit is used during quadrupling the baud rate in PIC18.
- a. TMR0ON
  - b. TXIF
  - c. RCIF
  - d. BRGH
35. \_\_\_\_\_ pin of PIC18 is used for serial data transmission .
- a. TX
  - b. RX
  - c. INT0
  - d. VDD
36. The interrupt vector location for high priority interrupt in PIC18 is\_\_\_\_\_.
- a. 00008H
  - b. 00002H
  - c. 00006H
  - d. 00005H
37. \_\_\_\_\_ pin of PIC18 is used for serial data reception .
- a. TX
  - b. RX
  - c. INT0
  - d. VDD
38. The external hardware interrupts pins are occurs at the port \_\_\_\_\_.
- a. A
  - b. B

- a.
  - b.
  - c.
  - d.
  - c. C
  - d. D
39. The interrupt vector location for low priority interrupt in PIC18 is\_\_\_\_\_.
- a. 00002H
  - b. 00018H
  - c. 00006H
  - d. 00005H
40. PIC18 has port \_\_\_\_\_ change interrupt.
- A
  - B
  - C
  - D

**Q.2 Long Answer Questions (8 Marks each)**

1. Explain Pin diagram of PIC18.
2. Explain ports pins of PIC18 with its dual functions.
3. Explain literal operation instructions of PIC18.
4. Explain any eight byte oriented instructions of PIC18.
5. Explain any eight control group instructions of PIC18.
6. Explain addressing modes of PIC18.
7. Explain registers involves in Timer 0 facility of PIC18.
8. Explain registers involves in ADC facility of PIC18.
9. Explain T0CON, TMR0H and TMR0L registers of timer 0.
10. Explain ADCON0 and ADCON1 registers of PIC18.
11. Explain registers involves in serial data transmission facility of PIC18.
12. Explain registers involves in serial data reception facility of PIC18.
13. Explain TXSTA and TXREG registers of PIC18.
14. Explain RCSTA and RCREG registers of PIC18.
15. Explain interfacing of MAX232 to PIC18 and write a program to transfer data serially.

**Q.3 Short Answer Questions (4 Marks Each)**

1. Write a short note clock and reset circuit of PIC18.
2. Write a short note on WREG and statues register of PIC18.
3. Write a short note on stack and stack pointer of PIC18.
4. Write a short note on bank switching in PIC18.
5. Explain port C of PIC18 with its dual function.

- a.
- b.
- c.
- d.
6. Write a short note on PIC18 file register.
7. Explain W and flag/statuses register of PIC18.
8. Explain any two addressing modes of PIC18.
9. Explain Immediate and register addressing modes of PIC18.
10. Explain BCF, BSF, BTG and BTFSC instructions of PIC18.
11. Explain ADDLW, ANDLW, SUBLW and MOVLW instructions of PIC18.
12. Explain ADDWF, ANDWF, SUBWF and MOVWF instructions of PIC18.
13. Explain direct and indirect addressing modes of PIC18.
14. Write an ALP/C program to generate square wave at port any port pin.
15. Write an ALP/C program to generate square wave at PC7.
16. Explain ADCON0 register of PIC18.
17. Explain ADCON1 register of PIC18.
18. Explain TMR0H and TMR0L registers of timer.



19. Explain T0CON register.
20. Enlist features of on chip ADC of PIC18.
21. Write an ALP/C program to generate square wave at PC7 using timer delay.
22. Compare Timer 0 and timer 1 of PIC18
23. Write a short note on interrupt facility of PIC18.
24. Write a short note on sources of interrupts in PIC18.
25. Explain TXSTA register of PIC18.
26. Explain RCSTA register of PIC18.
27. Explain TXREG and RCREG registers of PIC18.
28. Draw a circuit diagram of PIC18 as a digital thermometer.
29. Write an ALP/C program to transfer data serially.
30. Write an ALP/C program to receive data serially.