17PWELES119

UNIVERSITY OF ENGINEEERING AND TECHNOLOGY PESHAWAR
Department of Electrical Engineering (Main Campus)
Final-Term Examination
4TH Semester Spring 2023
Microprocessor based system design

Total Marks: 20 Time: 20 Mins

1. The internal RAM memory of the 8051 is:

A.32 bytes
B.64 bytes
C.128 bytes
D.256 bytes

2. This program code will be executed continuously:

```
STAT: MOV A, #01H
      JNZ STAT
```

A. True
B. False

3. The 8051 has _____ 16-bit counter/timers.

A. 1
B. 2
C. 3
D. 4

4. The address space of the 8051 is divided into four distinct areas: internal data, external data, internal code, and external code.

A. True
B. False

5. Data transfer from I/O to external data memory can only be done with the MOVX command.

A. True
B. False

6. The 8051 can handle _____ interrupt sources.

A. 3
B. 4
C. 5
D. 6

7. This statement will set the address of the bit to 1 (8051 Micro-controller):
SETB 01H

A. True
B. False

8. MOV A, @ R1 will:

A. copy R1 to the accumulator
B. copy the accumulator to R1
C. copy the contents of memory whose address is in R1 to the accumulator
D. copy the accumulator to the contents of memory whose address is in R1

9. A label is used to name a single line of code.

A. True
B. False

1/4

10. The following program will receive data from port 1, determine whether bit 2 is high, and then send the number FFH to port 3:

```
READ: MOV A,P1
ANL A,#2H
CJNE A,#02H,READ
MOV P3,#FFH
```

✓ A. True B. False

11. Device pins XTAL1 and XTAL2 for the 8051 are used for connections to an external oscillator or crystal.

✓ A. True B. False

12. When the 8051 is reset and the $\overline{EA}$ line is HIGH, the program counter points to the first program instruction in the:

A.internal code memory
B.external code memory
✓ C.internal data memory
D.external data memory

13. An alternate function of port pin P3.4 in the 8051 is:

A.Timer 0
✓ B.Timer 1
C.interrupt 0
D.interrupt 1

14. The I/O ports that are used as address and data for external memory are:

A.ports 1 and 2
B.ports 1 and 3
C.ports 0 and 2
✓ D.ports 0 and 3

15. The last 96 locations in the internal data memory are reserved for general-purpose data storage and stack.

✓ A. True B. False

16. Microcontrollers often have:

A.CPUs
B.RAM
C.ROM
✓ D.all of the above

17. A —— is used to isolate a bit, it does this because that ANI sets all other bits to Zero

A. subroutine
B. flag
C. label
✓ D. mask

18. Addressing in which the instructions contain the address of the data to be operated on is known as

✓ A. immediate addressing
B. implied addressing
C. register addressing
D. direct addressing

19. The 8051 has _____ parallel I/O ports.

✓ A. 2
B. 3
C. 4
D. 5

20. Bit-addressable memory locations are:

A.10H through 1FH
B.20H through 2FH
✓ C.30H through 3FH
D.40H through 4FH

21. The 8-bit address bus allows access to an address range of:

A.0000 to FFFFH
B.000 to FFFH
C.00 to FFH
D.0 to FH

22. The contents of the accumulator after this operation

MOV A,#0BH
ANL A,#2CH
will be

A. 11010111
B. 11011010
C. 00001000
D. 00101000

23. This program code will be executed once:

STAT: MOV A, #01H
JNZ STAT

A. True
B. False

24. Which of the following instructions will move the contents of register 3 to the accumulator?

A.MOV 3R, A
B.MOV R3, A
C.MOV A, R3
D.MOV A, 3R

25. Which of the following statements will add the accumulator and register 3?

A.ADD @R3, @A
B.ADD @A, R3
C.ADD R3, A
D. ADD A, R3

26. Data transfer from I/O to external data memory can only be done with the MOV command.

A. True
B. False

27. Which of the following commands will move the number 27H into the accumulator?

A.MOV A, P27
B.MOV A, #27H
C.MOV A, 27H
D.MOV A, @27

28. Which of the following commands will move the value at port 3 to register 2?

A.MOV P2, R3
B.MOV R3, P2
C.MOV 3P, R2
D.MOV R2, P3

29. The number of data registers is:

A. 8
B. 16
C. 32
D. 64

30. When the 8051 is reset and the EA line is LOW, the program counter points to the first program instruction in the:

A.internal code memory
B.external code memory
C.internal data memory
D.external data memory

31. What is the difference between the 8031 and the 8051?

A.The 8031 has no interrupts.
B.The 8031 is ROM-less.
C.The 8051 is ROM-less.
D.The 8051 has 64 bytes more memory.

32. The I/O port that does not have a dual-purpose role is:

A.port 0
B.port 1
C.port 2
D.port 3

33. To interface external EPROM memory for applications, it is necessary to demultiplex the address/data lines of the 8051.

A. True
B. False

34. The following command will copy the accumulator to the location whose address is 23H:
MOV 23H,A

A. True
B. False

35. The special function registers can be referred to by their hex addresses or by their register names.

A. True
B. False

35. The contents of the accumulator after this operation

MOV A,#2BH
ORL A,00H
will be:

A.1B H
B.2B H
C.3B H
D.4B H

36. The following program will cause the 8051 to be stuck in a loop:

LOOP: MOV A, #00H
JNZ LOP

A. True
B. False

37. Which of the following commands will copy the contents of RAM whose address is in register 0 to port 1?

A.MOV @ P1, R0
B.MOV @ R0, P1
C.MOV P1, @ R0
D.MOV P1, R0

38. The statement CALL READ passes control to the line labeled READ.

A. True
B. False

38. Which of the following commands will copy the contents of location 4H to the accumulator?

A.MOV A, 04H
B.MOV A, L4
C.MOV L4, A
D.MOV 04H, A

39. The microcontroller is useful in systems that have non variable programs for dedicated applications.

A. True
B. False

40. The total amount of external code memory that can be interfaced to the 8051 is:

A. 32K
B. 64K
C. 128K
D. 256K