Register Number.....

B.E. DEGREE EXAMINATIONS: APRIL / MAY 2009

Fourth Semester

MECHANICAL ENGINEERING

U07EC407 Electronics and Microprocessors

Time: Three Hours **Maximum Marks: 100**

Answer ALL the Questions:-

PART A (20 x 1 = 20 Marks)

1. A semiconductor has ____ band.
   (A) almost empty valence (B) almost empty conduction
   (C) almost full conduction (D) None of the above
2. Breakdown occurs in zener diode under
   (A) Forward bias (B) Reverse bias (C) both a & b (D) None of the above
3. The leakage current across a PN junction is due to
   (A) minority carriers (B) majority carriers
   (C) junction capacitance (D) both a and b
4. Efficiency of bridge rectifier is
   (A) 40.6 (B) 81.2 (C) 60.5 (D) 70.3
5. Input resistance is high for _____ configuration
   (A) Common base (B) Common emitter
   (C) Common collector (D) None of the above
6. If the position of the Q point is on X axis, then the amplifier is
   (A) Class A (B) Class B (C) Class AB (D) Class C
7. The device formed by connecting two SCRs in opposite direction with a gate is
   (A) Triac (B) Diac (C) UJT (D) JFET
8. An SCR consists of _____ PN junctions.
   (A) 1 (B) 2 (C) 3 (D) 4
9. Which of the following is not an alphanumeric code?
   (A) ASCII (B) EBCDIC (C) Hollerith (D) Parity
10. A+(B+C)= (A+B)+C specifies ____ law
    (A) Commutative (B) Associative (C) Distributive (D) None of the above
11. Y=A'B+AB' represents
    (A) EX-OR gate (B) EX-NOR gate (C) NAND gate (D) NOR gate

12. If the register has both right and left shifts and parallel load capability, it is ___shift register.

(A)Unidirectional (B) Bidirectional

(C) Universal (D) None of the above

13. The software that translates source code into machine code is

(A) Editor (B) Compiler (C) Assembler (D) Locator

14. Specify the type of addressing: LDA 2000H

(A) Immediate (B) Register (C) Direct (D) Indirect

15. The registers W and Z in 8085 are

(A) Temporary (B) General purpose (C) 16 bit registers (D) None of the above

16. The DAA instruction is used for adjusting accumulator to

(A) binary (B) octal (C) hexadecimal (D) BCD

17. The most stable clock circuit is

(A) LC tuned (B) RC tuned

(C) Crystal oscillator (D) None of the above

18. In 8255, Mode 2 is ____ mode.

(A) Unidirectional (B) Bidirectional (C) BSR (D) None of the above

19. In memory mapped I/O, the device address is

(A) 8 bit (B) 4 bit (C) 16 bit (D) 32 bit

20. The signal used for data transfer between devices with different data transfer speeds are called

(A) Latching (B) Buffering (C) Interrupts (D) Handshaking

PART B (5 x 16 = 80 Marks)

21. (a) Brief about the construction, VI characteristics and applications of PN Junction diode and Zener diode.

(OR)

(b) Explain center tapped full wave rectifier. Also give the expressions for various Parameters.

22. (a) What is transistor biasing? Why it is needed? Explain the methods of biasing.

(OR)

(b) (i) Draw and explain the characteristics of SCR. (6)

(ii) Give in detail about UJT. (10)

23. (a) (i) Convert $(725.25)_8$ to its decimal, binary and hexadecimal equivalent. (6)

(ii) Describe about binary codes. (10)

(OR)

(b) (i) Simplify the expression : AB+AC+ABC(AB+C) (4)

(ii) Explain single slope and dual slope ADC techniques. (12)

24. (a) Draw and explain the architecture of 8085 microprocessor.

(OR)

(b) (i) Write a program for 8 bit addition and subtraction using 8085. (12)

(ii) What are the addressing modes available in 8085? (4)

25. (a) Design a traffic light control system using microprocessor.

(OR)

(b) How a stepper motor is controlled by microprocessor?

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