Register Number: ……..

B.E., DEGREE EXAMINATIONS: NOV/DEC 2012

Fifth Semester

MECHANICAL ENGINEERING

ECE281 : Electronics and Microprocessor

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

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Consider the diode operated under forward biased condition .The diode starts conducting ,when it's forward voltage exceeds ----------
   a) Breakdown voltage b) Cut-in voltage
   c) Threshold voltage d) Break-over voltage
2. Voltage regulators keep a constant…… output voltage when the input or load varies within limits.
   a) DC b) AC
   c) Ripple d) Both AC and Ripple
3. In the active region of BJT, the collector-base junction is ……..-biased, the base-emitter is ……-biased.
   a) Forward, forward b) Forward , reverse
   c) Reverse ,forward d) Reverse, reverse
4. The type of feedback used in feedback amplifier is…….
   a) Negative b) Positive
   c) Positive & negative d) Regenerative
5. Consider the given Binary number 101101, its equivalent octal number is------.
   a) 65 b) 55
   c) 51 d) 45
6. How many flip-flops are required to design a modulo-6 up counter?
   a) 3 b) 4
   c) 5 d) 6
7. How many bits are supported by 8085 processor data bus ?
   a) 16 b) 8
   c) 32 d) 64
8. In 8085 processor , ALE is a _____ bus signal.
   a) Data b) Address
   c) Control d) DMA

9. Which type of stack is used in 8085?

a) FIFO b) LIFO

c) FILO d) LILO

10. How many I/O ports are supported by 8255 PPI?

a) 3 b) 8

c) 5 d) 6

PART B (10 x 2 = 20 Marks)

11. What is meant by doping?
12. What is meant by zener breakdown?
13. List the ideal characteristics of an operational amplifiers.
14. List the advantages of negative feedback.
15. Give the function table of half adder circuit.
16. Mention the applications of flip flops.
17. Draw the timing diagram of op-code fetch machine cycle.
18. Mention the hardware interrupts and its priority supported by 8085 processor.
19. What is the use of 3 to 8 decoders in interfacing?
20. Write an assembly language program for finding the two's complement of a given binary number.

PART C (5 x 14 = 70 Marks)

21. a) (i) Mention the difference between Intrinsic & Extrinsic semiconductors (4)

(ii) Explain in detail, the operation of a PN junction diode with its V-I Characteristics. (10)

(OR)

b) In detail, explain the operation of the full wave rectifier circuit with relevant waveforms & derive its ripple factor.

22. a) With neat I/P and O/P characteristics ,explain the operation of BJT under common emitter configuration.

(OR)

b) With neat diagram, explain the working principles of JFET device with its drain & transfer characteristics.

23. a) (i) Design a full adder circuit & explain its function table. (5)

(ii) Draw the circuit of a binary adder-subtractor & explain its working. (9)

(OR)

b) Draw the circuit diagram of a synchronous counter using J-K flip-flop. In detail, explain its operation with the necessary timing diagram.

24. a) Explain the architecture of 8085 microprocessor in detail.

(OR)

b) (i) Explain the various addressing modes of 8085 Microprocessor with an examples. (5)

(ii) Explain any five arithmetic instructions of 8085 Microprocessor with example. (9)

25. a) Explain how I/ O devices are interfaced to the microprocessor system in detail.

(OR)

b) In detail, Explain the interfacing concepts of traffic light control system with associated assembly level program.

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