

Reg. No.:

22

BE/B.Tech. Degree Examination, April/May 2011

Geo Informatics

II Semester

EC9168 BASIC ELECTRONICS ENGINEERING

Time: 3Hrs

Max: 100 Marks

Answer all the questions

Part – A (10X2 = 20)

1. What do you understand by depletion region at p-n junction?
2. What is early effect?
3. Compare BJT and FET.
4. State Barkhausen criterion for oscillation.
5. Mention the characteristics of an ideal Opamp.
6. What is a Zero crossing detector?
7. How does the J-K flip flop differ from S-R flip flop from its basic operation?
8. Give the principle of LCD type display device.
9. State piezoelectric effect.
10. A broadcast transmitter radiates 40 KW when the modulation percentage is 80. Calculate carrier power and power of each sideband.

Part – B (5X16 = 80)

11. (i) Describe a set up to obtain the Input and output characteristics of a transistor in CE configuration. (8)  
(ii) Explain the working of SMPS with neat Block Diagram. (8)
12. (a) (i) Explain Common Emitter amplifier with neat diagram. (12)  
(ii) In a transistorized Hartley oscillator the two inductances are 2mH and 20 $\mu$ H while the frequency is to be changed from 950KHZ to 2050KHZ. Calculate the range over which the capacitor is to be varied. (4)

Or

- (b) (i) Show that the gain of Wien bridge oscillator using BJT amplifier must be at least 3 for the oscillations to occur. (10)  
(ii) Explain CS MOS Amplifier. (6)
  13. (a) (i) Explain the working of binary-weighted resistor D/A convertor. (8)  
(ii) Discuss the operation of IC 555 timer as a monostable multivibrator. (8)
- Or
- (b) (i) Explain the working of Integrator and Differentiator using Opamp. (8)  
(ii) Explain the working of a successive approximation A/D Converter. (8)

14. (a) (i) Draw an asynchronous decade counter and explain its operations. (10)

(ii) Illustrate the following codes with and examples:

Binary, BCD, 8421 and Gray. (6)

Or

(b) (i) Draw the logic diagram for master slave J-K flip flop and explain. (8)

(ii) Draw the four bit serial in serial out shift register and explain. (8)

15. (a) (i) Show that the DSBFC signal consists of one carrier and two sidebands of equal amplitudes mathematically. Draw its waveform and frequency spectrum. (12)

(ii) Compare AM and FM (4).

Or

(b) Explain PCM transmitter and receiver with neat block diagram (16)

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