

# Question bank (EJ/IE/IS3G)

## EDC (17319)

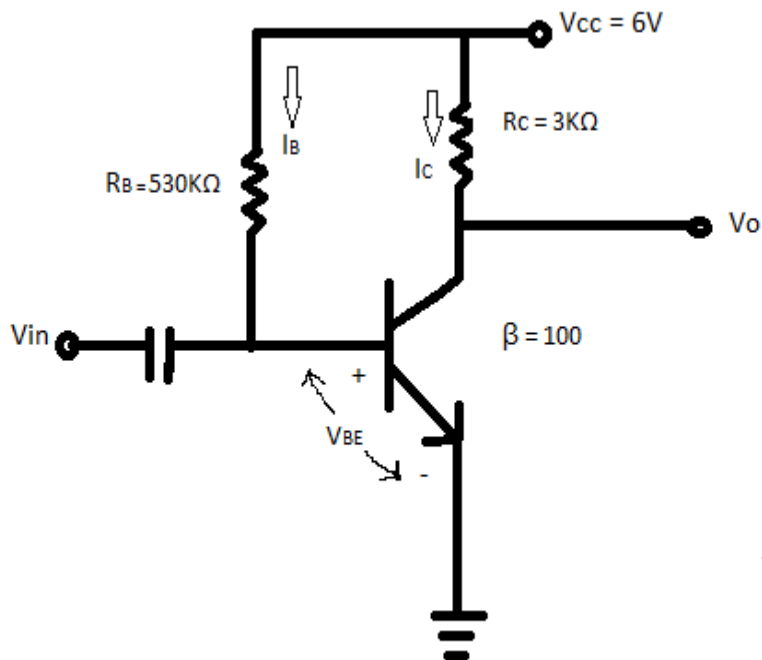
### Chap 1

#### 3 marks question

- 1) List types of transistors and draw their symbols .Why ordinary junction transistor is called a bipolar transistor.
- 2) In CE configuration if  $\beta=150$  , leakage current  $I_{CEO} =100 \mu\text{A}$ . If base current is  $0.2\text{mA}$ , determine  $I_C$  and  $I_E$ .
- 3) State different configurations of BJT. Define  $\alpha$  and  $\beta$  of a transistor.
- 4) Define biasing and state the need of biasing.
- 5) Explain thermal runaway. How it can be avoided.

#### 4 mark question

- 1) Compare CB, CC and CE configurations.
- 2) Draw and explain output characteristics of CE configuration.
- 3) Derive the relation between  $\alpha$  and  $\beta$  with respect to BJT.
- 4) Explain the operation of NPN transistor.
- 5) Draw the circuit diagram of CB configuration. Draw input and output characteristics with different regions.
- 6) Draw and explain voltage divider bias method .
- 7) Study the following fixed bias circuit.



Also draw the DC load line and determine the operating point.

- 8) Explain transistor as a switch.
- 9) Define delay time ,rise time, fall time,  $T_{ON}$  and  $T_{OFF}$  time.

## Chap 2

### 3 marks question

- 1) Define amplification factor , transconductance and drain resistance with respect to JFET.
- 2) Give the interrelationship between  $\mu$  ,  $g_m$  and  $r_d$ .
- 3) Draw drain and transfer characteristics of n-channel JFET.

### 4 mark question

- 1) Explain self bias method for FET with circuit diagram.
- 2) Compare BJT and FET.
- 3) Draw and explain N-channel D – MOSFET.
- 4) Draw and explain P-channel JFET.
- 5) Explain the working of N-channel E-MOSFET.

## Chap 3

### 3 marks question

- 1) Define voltage gain , bandwidth and power gain.

### 4 mark question

- 1) Draw and Explain single stage CE amplifier.
- 2) An amplifier has a signal input voltage of 0.25V and draws 1mA from the source. The amplifier delivers 8V to load at 10mA.Determine
  - 1) Current gain, 2) voltage gain , 3) power gain, 4) i/p resistance

## Question Bank (2013-2014)

Name of subject: EDC

Subject code: 17319

Semester: III

Unit Test :II

Course : IE/IS/EJ

## Chapter 3

### Amplifiers

1. With the help of neat circuit diagram explain the operation of common source amplifier. (4m)
2. Compare Class A, Class B, Class C, Class AB (3m)
3. Draw & explain Class B push pull Amplifier (4m)

4. Draw & explain double tuned amplifier with its frequency response(4m)
5. Explain the concept of crossover distortion with suitable waveform (3m)
6. Define 1. Resonance frequency 2. Efficiency 3. Power Amplifier (3m)

#### **Chapter.4**

##### **Feedback Amplifiers & Oscillators**

7. Draw the block diagram and circuit diagram for current series feedback amplifier. (4m)
8. Explain the effect of negative feedback on voltage gain, input & output resistances, distortion, bandwidth and noise. (4m)
9. Explain the advantages and disadvantages of negative feedback. (3m)
10. Draw the ckt. Diagram of crystal oscillator . Give the basic principle (3m) of piezoelectric crystal and also give the equivalent ckt. diagram.
11. Draw & explain RC phase shift oscillator. (4m)
12. A phase shift oscillator has  $R=220\text{Kohms}$ ,  $C=500\text{pF}$ . Calculate the frequency of oscillation. (3m)

#### **Chapter.5**

##### **Time Base Generators**

13. Explain operation of UJT with neat diagram. (4m)
14. Draw & explain UJT relaxation oscillator. Draw the waveforms & write the formula of frequency. (4m)
15. Draw and explain the operation of Bootstrap sweep circuit. (4m)
16. Draw and explain the operation of Miller sweep circuit. (4m)
17. Draw and explain the operation of current time base generator. (4m)
18. Give application of sweep generators in TV and CRO. (3m)
19. Give applications of UJT . (3m)
20. A UJT with  $\eta=0.62$  is used in a relaxation oscillator circuit with  $R=5\text{k}\Omega$  and  $C=0.05\mu\text{F}$ . Determine the period and frequency of oscillation. (4m)  
Define intrinsic standoff ratio.

## Chapter.6

### Voltage Regulators

21. Draw & explain zener diode as a voltage regulator. (3m)
22. Draw & explain transistorized shunt regulator . (4m)
23. Draw & explain transistorized series regulator . (4m)
24. Construct a dual power supply capable of giving  $\pm 12V$  using 78XX (4m) and 79XX IC's.
25. Draw the pin diagram of 1. IC 78XX 2. IC 79XX 3. IC LM723 (3m)
26. State important features of IC 723. What is the use of CL and CS (4m) terminals.
27. For a zener diode voltage regulator , if  $V_{in} = 20V$  ,  $V_z = 10V$ , (4m)  
 $R_s = 500\Omega$ ,  $R_L = 1K\Omega$ , find a. Load voltage, b. voltage drop across series resistor  $R_s$  and c. current through zener diode.

