

- Q.28 Describe the advantages of disadvantages of  
 i) R.C. Coupling  
 ii) Transformer Coupling (CO5)
- Q.29 Why does the gain of R-C coupled amplifier fall in  
 a) low frequency range  
 b) high frequency range (CO5)
- Q.30 Define the terms  
 i) Decibel gain ii) Frequency Response  
 iii) Band width (CO5)
- Q.31 Describe merits and demerits of negative feedback in amplifiers. (CO7)
- Q.32 What do you mean by feedback? What do you understand by negative and positive feedback. (CO7)
- Q.33 What is a multivibrator? Describe the principle on which its work. (CO8)
- Q.34 Define PSRR and Slew rate of OP-AMP. (CO9)
- Q.35 Explain the OP-AMP with summing amplifier. (CO9)

#### SECTION-D

- Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)
- Q.36 Explain how you will determine the voltage gain of the CE amplifier by plotting the dc load line on the output characteristics of the transistor. (CO2)
- Q.37 Draw and explain working of N-channel MOSFET in depletion mode. (CO6)
- Q.38 Draw the block diagram of IC 555 and its operation with waveform. (CO9)
- (**Note:** Course outcome/CO is for office use only)

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### 3rd Sem / Mechatronics Subject:- Analog Electronic Devices

Time : 3Hrs.

M.M. : 100

#### SECTION-A

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 The maximum efficiency of full wave rectifier is  
 a) 40.6% b) 100%  
 c) 1.2% d) 81.2%
- Q.2 A zener diode is used as  
 a) An amplifier b) A voltage regulator  
 c) A coupler d) A rectifier
- Q.3 The emitter resistor RE bypassed by a capacitor  
 a) Reduces the voltage gain  
 b) Increases the voltage gain  
 c) Stabilizes the Q-point  
 d) Causes thermal runaway
- Q.4 The biasing circuit which gives best stability to the Q-point is  
 a) Base resistor biasing  
 b) Feedback resistor biasing  
 c) Potential divider biasing  
 d) None of these
- Q.5 When a reverse bias is applied to a crystal diode, it  
 a) Raises the potential barrier  
 b) Lowers the potential barrier

- c) Increases the majority carrier current greatly  
d) None of these
- Q.6 The most commonly use transistor configuration is :  
a) common emitter      b) common base  
c) common collector    d) all equally used
- Q.7 Emitter followers is use for  
a) current gain              b) impedance matching  
c) voltage gain              d) none of the above
- Q.8 During operating the transistor as a switch is  
a) always in cut off region  
b) always in saturation region  
c) either in cut off and saturation region  
d) data not complete
- Q.9 An ideal OP-AMP has  
a) infinite voltage gain  
b) infinite input resistance  
c) zero output resistance  
d) all the above
- Q.10 An Op-amp is a device which has following number of input terminals.  
a) One                              b) Two  
c) Three                            d) four

### SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 In a p-type semi-conductor \_\_\_\_\_ are majority carriers.
- Q.12 A capacitor circuit does not allow to pass \_\_\_\_\_ component.
- Q.13 The base of transistor is \_\_\_\_\_ doped.

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- Q.14 What is faithful amplification?
- Q.15 What is RC coupling.
- Q.16 The voltage gain of mid frequency range in an R-C coupled amplifier is \_\_\_\_\_
- Q.17 Very small frequency signals are amplified by using \_\_\_\_\_ Coupling.
- Q.18 Define the pinch off voltage
- Q.19 What is open loop?
- Q.20 Define duty cycle.

### SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Explain the action of a zener diode as a voltage regulator (CO1)
- Q.22 Explain why a bridge rectifier is preferred over a center tap rectifier. (CO1)
- Q.23 Draw a circuit diagram of full wave rectifier using bridge connection. (CO2)
- Q.24 Explain the function of the emitter, base and collector in the operation of a junction transistor. (CO2)
- Q.25 State the factors to be considered while designing a biasing circuit for a good transistor voltage amplifier. (CO3)
- Q.26 Draw the circuit diagram of a single stage transistor amplifier. State the function of each component used in this circuit. (CO4)
- Q.27 Explain how amplified voltage becomes available at the output points of a single stage amplifier. (CO4)

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