Q.28 Explain the effect of temperature on the conductivity of intrinsic semiconductor.

Q.29 Describe drift and diffusion current.

Q.30 Draw the emitter follower circuit and explain its applications.

Q.31 How current flows in a PN junction diode.

Q.32 Differentiate between actual and constant voltage source.

Q.33 Explain the characteristics and operation of P channel FET.

Q.34 Differentiate between P type and N type semiconductor.

Q.35 What is the need of multistage amplifier?

## SECTION-D

**Note:** Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Difference between BJT, JFET and MOSFET.

Q.37 Explain working of transformer amplifier with its frequency response and applications.

Q.38 Compare all the three configurations of transistor.



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**Electrical Engg**
**Subject:- Electronics - I**

Time : 3Hrs. M.M. : 100

## SECTION-A

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

Q.1 Which of the following is a pentavalent impurity

a) Lead b) Boron
c) Arsenic d) Carbon

Q.2 At 0°C temperature intrinsic semiconductor act as

a) Conductor b) Insulator
c) Semiconductor d) None

Q.3 Which of the following is a conductor

a) Aluminium b) Silicon
c) Germanium d) Gallium Arsenide

Q.4 Most efficient transistor configuration is

a) CC b) CE
c) CB d) None

Q.5 Minority carriers in P type semiconductor are

a) Holes b) Electrons

c) Both d) None

Q.6 The collector is_____doped.

a) Medium b) Lightly

c) Heavily d) None

Q.7 The efficiency of half wave rectifier is

a) 40.6 b) 25

c) 80.2 d) None

Q.8 The transistor works as an amplifier in_____

a) Active b) Saturation

c) Cut off d) None

Q.9 The most popular biasing method used in amplifier circuit is

a) Fixed b) Voltage divider

c) Emitter resistor d) None

Q.10 JFET has_____terminals

a) 3 b) 2

c) 1 d) 4

## SECTION-B

**Note:** Objective type questions. All questions are compulsory. (10x1=10)

Q.11 What are active components?



Q.12 JFET stands for_____

Q.13 Draw NPN transistor

Q.14 Draw the symbol of LED

Q.15 What is doping

Q.16 What is transistor biasing ?

Q.17 What is Q point?

Q.18 Define intrinsic semiconductor

Q.19 Define bandwidth

Q.20 Write two applications of Zener diode.

## SECTION-C

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Compare conductor and insulator.

Q.22 Draw the VI characteristics of semiconductor diode and explain.

Q.23 Explain direct coupled amplifier.

Q.24 Explain photo diode.

Q.25 Explain half wave rectifier circuit and its rectifier efficiency.

Q.26 Explain the loading effect in multistage amplifier.

Q.27 How to select an operating point.