S. B. Roll. No.....

ANALOG ELECTRONICS
3rd Exam/Elect/6521/Nov'24
(For 2018 Batch Onwards)

Duration: 3Hrs. **M.Marks:75**

SECTION-A

Q1. Do as directed. **15x1=15**

a. The difference between the energies of conduction band and valence band is called _____
b. Which are the majority charge carriers in n-type semiconductor?
c. Name any two active components.
d. A crystal diode acts as an _____switch.
e. What is an ideal diode?
f. What is ripple factor?
g. Zener diode is made to operate in _____region.
h. Which are the three terminals of BJT?
i. In active region, the input junction of a transistor is ____biased and the output junction is _____biased.
j. What is a thermal runaway of transistor?
k. For a transistor to work as an amplifier, its operating point should lie in _____region.
l. The point of intersection of d.c. and a.c. load lines is called _____
m. Which type of coupling is preferred for impedance matching?
n. MOSFET stands for?
o. FET is a _____device.

SECTION-B

Q2. Attempt any six questions. **6x5=30**

i. What are intrinsic and extrinsic semiconductors? How we can increase their conductivities?
ii. Explain the working and V-I characteristics of PN junction diode.
iii. Explain the circuit and working of pie filter.
iv. Explain the working of NPN transistor.
v. Why CE is the most preferred transistor configuration?
vi. Explain the circuit and working of zener diode as voltage stabilizer.
vii. What are the difference between BJT and FET?
viii. Explain the concept of d.c. and a.c. load lines.
ix. Explain the terms: Frequency response, Decibel gain and Bandwidth.

SECTION-C

Q3. Attempt any three questions. **3x10=30**

a. Explain the circuit and working of centre tap full wave rectifier with advantages & disadvantages.
b. Draw and explain the input &output characteristics of transistor in Common Emitter configuration in details.
c. What is multistage amplifier? Explain the circuit and working of RC coupled multistage transistor amplifier with advantages and disadvantages.
d. Explain the construction, working and characteristics of MOSFET.
e. i) What is stabilisation? Explain the need of stabilisation of operating point.
ii) Explain the concept of hybrid parameters of a transistor?