S.B. Roll No.....

ELECTRONICS-I

3rd Exam/Elect/0525/May'18

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

SECTION-A

Q1. Fill in the blanks. **10x1.5=15**

a. In P-type semiconductors, the minority carriers are _____
b. A MOSFET has _____terminals.
c. An ideal Voltage source has _____internal resistance.
d. Zener diode is made to operate in _____ region.
e. In a transistor, base is made very_____.
f. The three terminals of a transistor are _____base and__
g. The polarity of diode terminals can be checked by____
h. A single stage amplifier contains _____transistors
i. In an amplifier, power gain= current gain * _____gain
j. For power amplification mostly _____coupling is used.

SECTION-B

Q2. Attempt any five questions. **5x6=30**

i. Explain what you mean by constant current source.
ii. What is a transformer? Mention important applications of transformer.
iii. What is a tunnel diode? Draw its symbol and explain its Characteristics.
iv. What do you mean by h-parameters of transistor? Explain.
v. Explain with suitable diagram intrinsic and extrinsic semiconductors.
vi. Differentiate between dc and ac load line.
vii. Explain the term biasing. Why a transistor should be biased?

SECTION-C

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

a. Draw the circuit diagram of transformer coupled amplifier and explain its working and frequency response.
b. Explain the output characteristics of CE transistor. Indicate the three operating regions over it.
c. With the help of diagram and waveform, explain the working of full wave bridge rectifier. Also write its advantages and disadvantages.
d. Draw construction details of JFET and explain why FET is called voltage controlled device?
e. Describe the following filter circuits
    i. Shunt capacitor filter
    ii. Series inductor filter
    iii. Choke input LC filter