No. of Printed Pages : 4
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120933/30933

3rd Sem. / Electrical / PE

Subject : Electronics - I / Basic Electronics

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

Q.1 a) Define function capacitance of a diode.

b) Define a constant voltage and current source.

c) What are N-type semiconductors.

d) What is forward biasing.

e) Define Input impedance.

f) Symbol of P channel JFET.

g) What is photodiode.

h) What is operating point.

i) Define Rectifier Efficiency of Half wave rectifier.

j) Define MOSFET.

k) What are different types of coupling used in amplifier.

l) Draw symbol of PNP transistor.

m) Give graphical representation of current source.

n) What is varacter diode.

o) Define Decibel gain and current gain.

p) Applications of transformer coupled amplifiers.

q) Define depletion layer.

r) Define diffusion current.

SECTION-B

Note: Short answer type questions. Attempt any ten parts 10x4=40

Q.2 i) Give the concept of AC load line.

ii) Draw the symbol of NPN and its working.

iii) How zener diode stabilises voltage.

iv) How operating pointing is changed due to temperature.

v) Draw the frequency response of single stage transistor amplifier.

vi) Draw V-I characteristic of PN juction diode.

vii) Compare intrinsic semiconductor and extrinsic semiconductor.

viii) What are H-parameters, why they are used.

ix) What are active and passive components. Give examples of each.

x) Give the characteristics of MOSFET.

xi) Explain forward and reverse biasing of diode.

xii) What is loading effect in multistage amplifiers.

xiii) Explain collector to base bias circuit.

xiv) Write the comparison between BJT and JFET.

xv) Explain the working of half wave rectifier circuit.

SECTION-C

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.3 Explain various types of filter circuits used and their applications.

Q.4 Differentiate semiconductor, conductor and insulators on the basis of energy band structure. Why semiconductors have -ve temperature coefficient of resistance.

Q.5 Draw the input and output characteristics of transistor in CE configuration. and explain.

Q.6 Explain the need of multistage amplifiers and working of Transformer coupled amplifiers and its frequency response.

Q.7 (i) Single Stage Transistor Amplifier circuit in CE configuration.

(ii) JFET as an amplifier.