Sub Code: EEC101

Paper Id: 130103 Roll No:

B TECH

(SEM –I) THEORY EXAMINATION 2019-20

Electronics Engineering

Time: 3 Hours *Total Marks: 100*

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a.	**Differentiate between Clipper and Clamper circuit.**
b.	**What you mean by Doping. Describe its need.**
c.	**Give all the Equivalent /Approximation circuits of a Diode.**
d.	**Why the Q-point varies in transistors.**
e.	**Differentiate between N-type and P-type semiconductor.**
f.	**Define Threshold Voltage for an E-MOSFET. Also define I_{DSS} for an JFET.**
g.	**Describe trans conductance curve of JFET.**
h.	**Explain the use of Digital multimeter.**
i.	**Explain the form factor of full wave rectifier.**
j.	**Explain the effect of temperature on reverse saturation current.**

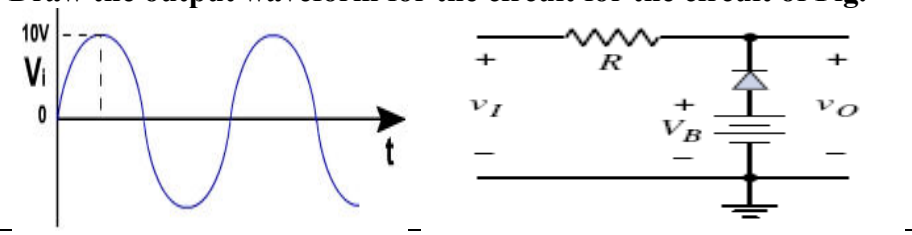
SECTION B

2. Attempt any THREE of the following: 10 x 3 = 30

a.	**Write the diode current equation of a p-n junction and explain the V-I characteristics from it.?**
b.	**With the help of block diagram explain the working of digital voltmeter.**
c.	**Explain half wave rectifier and also drive its avg. and rms. current value**
d.	**Describe the working of voltage multiplier circuit.**
e.	**Explain the construction and working of E - MOSFET**

SECTION C

3. Attempt any *one* part of the following: 10 x 1 = 10

(a)	**Differentiates between the Avalanche breakdown and Zener breakdown**
(b)	**Draw the output waveform for the circuit for the circuit of Fig.** 

4. Attempt any *one* part of the following: 10 x 1 = 10

(a)	**Calculate Q point for a Voltage Divider Biased CE amplifier having R_1=10KΩ,R_2=5KΩ, R_C=1KΩ ,R_E=500Ω,V_{CC}=10v, β=100.**
(b)	**Explain the construction and working principle of NPN transistor.**

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5. Attempt any *one* part of the following: 10 x 1 = 10

(a)	Explain the construction, operation and characteristics of N channel JFET
(b)	Draw and Explain the working of:-(1) Integrator using OP-AMP, (2)Summing amplifier using OP-AMP

6. Attempt any *one* part of the following: 10 x 1 = 10

(a)	Explain the various number system and its conversion of bases (decimal, binary, octal and hexadecimal numbers)
(b)	Minimize using K-map and realize using NAND gates only. $F(A, B, C, D)= \Pi M(3, 4, 5, 7, 9, 13, 14, 15). d(0, 2, 8)$

7. Attempt any *one* part of the following: 10 x 1 = 10

(a)	Describe measurement of Voltage, Frequency & Phase using CRO
(b)	Describe the working of Digital Multimeter with their block diagram.