Printed Pages: 02 **Sub Code: REC101**

Paper Id: 130101 **Roll No.** | | | | | | | | | | |

B. TECH.
(SEM I) THEORY EXAMINATION 2018-19
BASICS ELECTRONICS

Time: 3 Hours ***Total Marks: 70***

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

SECTION A

1. Attempt *all* questions in brief. **2 x 7 = 14**

a) What is a ripple factor? Explain
b) What is punch through effect?
c) write advantages of digital voltmeter
d) What is positive clamper and negative clamper?
e) Define amplitude modulation.
f) Explain why an ordinary transistor is called bipolar?
g) Write the properties of an ideal op-amp

SECTION B

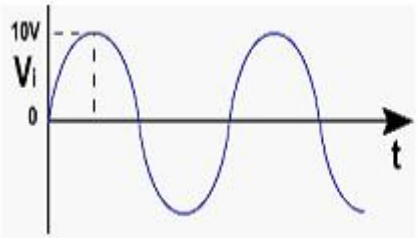
2. Attempt any *three* of the following **7x 3 = 21**

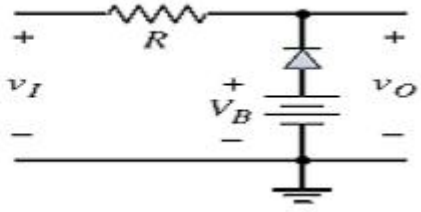
a) Explain the operation of biased clipper and combination clipper
b) Draw a self-biased circuit and derive an expression for stability factor.
c) What is the difference between a CRT and CRO? Draw a neat block diagram of general purpose CRO and explain function of each block
d) Draw a circuit diagram of inverting and non-inverting amplifier and the expression for output voltage.
e) Write the advantages and disadvantages of a digital communication system.

SECTION C

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

a) Explain how a barrier potential is developed at the P-N junction.
b) Draw the output waveform for the circuit for the circuit of given figure



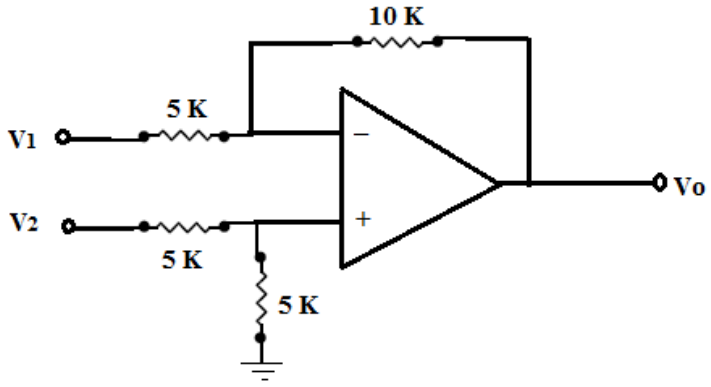


4. Attempt any *one* part of the following: **7 x 1 = 7**

a) Explain the non-inverting summing amplifier with circuit diagram.
b) With the help of a block diagram, explain the operation of a digital voltmeter.

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

a) Write short notes on the following: Electrostatic focusing, measurement of phase angle by CRO.
b) Find the output voltage of the Op-Amp circuit shown in figure, where $V_1 = 10$ volt, $V_2 = 5$ volt.



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

a) Explain the functioning of a buffer amplifier.

b) Explain the difference between baseband transmissions and pass band transmission.

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

a) Draw a simple circuit of a common collector amplifier and explain its operation.

b) The antenna current of an Am transmitter is 8 Amperes when only the carrier is sent, but it increases to 8.93Amperes, when the carrier is modulated by a single sine wave. Find percentage modulation. Determine the antenna current when the percent of modulation changes to 0.8.