Pranjya

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- May 2019

B.Tech 2nd Semester

COURSE CODE: 10B11EC211 MAX. MARKS:35

COURSE NAME: Basic Electronic Devices and Circuits

COURSE CREDITS: 4 MAX. TIME: 2 Hrs

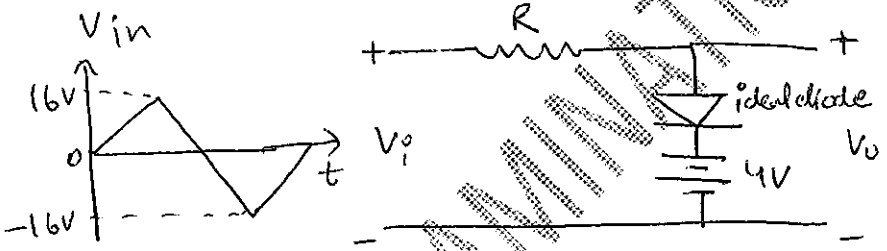
Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

Q1. (a) Draw the circuit diagram and output waveform of following clamper circuit-

(i). Biased positive clamper (ii). Biased negative clamper **[4]**

In both circuits take square wave of 5volt p-p as input signal and bias voltage of 3 volts.

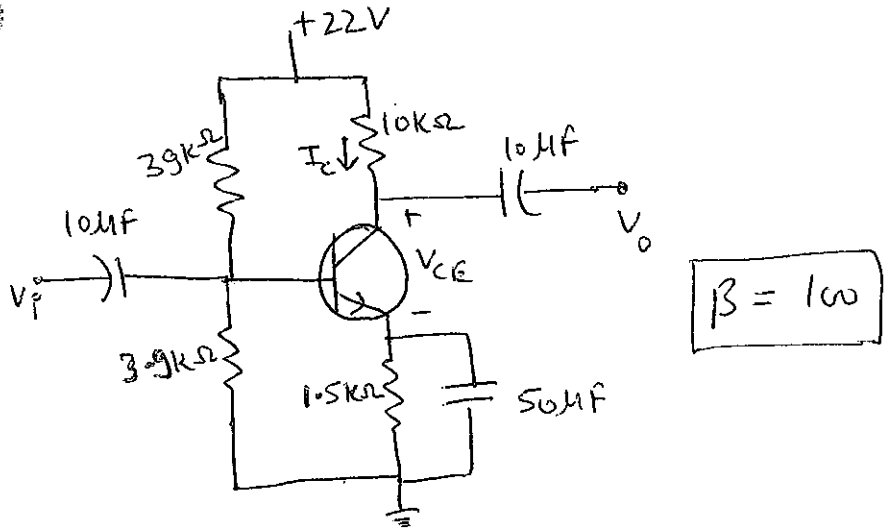
(b) Draw the output wave form for the given circuit with explanation **[3]**



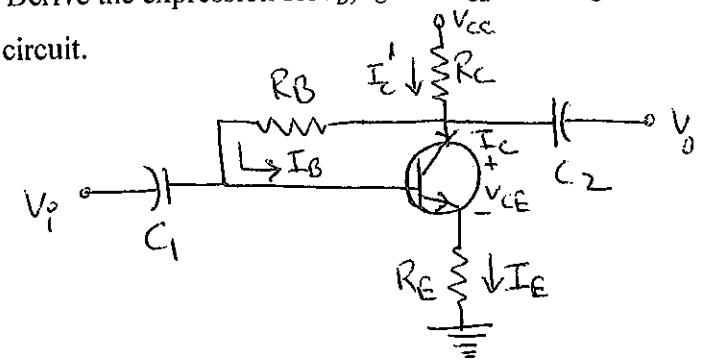
Q2 (a) Draw the pin diagram of IC 741. Also explain the concept of virtual ground in an op-amp. **[3.5]**

(b) Define α, β and γ of a transistor and derive the relationship between α and β. **[3.5]**

Q3 (a). Determine co-ordinates of Q point for the given voltage divider bias circuit: **[3.5]**



(b). Derive the expression for I_B, I_C and V_{CE} for the given collector feedback bias circuit. [3.5]



Q4 (a). Explain the construction and working of Junction Field Effect Transistor with neat diagram. [3]

(b). Draw the drain and transfer characteristics of n-channel JFET and define I_{DSS}, V_{GS} and V_P. [4]

Q5 (a.) What are the two types of MOSFET? How do they differ in their structure? Briefly explain the working of enhancement type MOSFET with diagram. [5]

(b). write down the differences between BJT and FET. [2]