

BACHELOR OF COMPUTER SCIENCE ENGINEERING EXAMINATION 2015

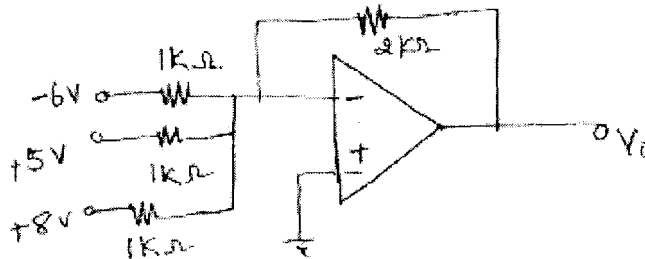
(1ST YEAR 2ND SEMESTER)

TIME: THREE HOURS

FULL MARKS 100

Basic Electronics**Answer any five of the following question****5X20=100**

1. a) In a Common Emitter transistor circuit if $\beta = 100$ and $I_B = 50\mu A$, compute the values of α , I_E and I_C .
 b) Draw the common emitter circuit and sketch the input and output characteristics. Also explain active region, cutoff region and saturation region by indicating them on the characteristic curve.
 c) Define the two current amplification factors of BJT and derive the relationship of two factors.
2. a) Explain how Op-Amp can be used as
 i) Integrator ii) Inverting and iii) Differentiator circuit
 b) Find the output of the following Op-Amp Circuits.



3. a) With a neat circuit diagram and waveforms explain the working of full wave bridge rectifier And derive the expression of average output voltage, current, and RMS value of voltage of above said rectifier.
 b) In a full wave rectifier, the input is from 230V AC Supply. The load and diode forward resistances are 100Ω and 10Ω respectively. Calculate the average voltage, dc output power, ac input power, rectification efficiency and percentage regulation.
 c) Discuss merits & demerits of bridge rectifier over centre tap rectifier
4. a) What is the property of an Ideal Conductor?
 b) How a semi-conductor does works as a conductor? Explain with energy-band diagram. and draw the voltage current characteristics of PN Junction diode.
 c) What is PIV of a PN junction Diode?
5. a) “After triggering gate have no control “ Explain it with two transistor model of SCR

- b) Explain the working of p-n-p-n devices and draw the voltage current characteristics of SCR.
 - c) Explain the role of holding current for turn off process of SCR.
6. Write short note of the following
- a) LEDs & LCDs,
 - b) TFTs & OLEDs
 - c) Opto-isolators,
 - d) photo-electric and photo-voltaic devices