ASSIGNMENT-2
SUB-BASIC ELECTRONICS
BRANCH-CSE
2ND SEMESTER
ABIT CUTTACK

Full Mark: 100

SECTION-A

Q.1 (Answer Any 8 Questions) **[8 x 2=16]**

a) Draw the equivalent circuit diagram of diode and write 4 application of diode.
b) Write 4 applications of LED.
c) Write 4 applications of Zener diode.
d) Write diode current equation (schockley diode equation) and derive each parameter.
e) Draw equivalent diagram of OPAMP.
f) Define CMRR and slew rate of OPAMP.
g) Draw 4 block diagram in OPAMP.
h) Define OPAMP as voltage follower of OPAMP.
i) Define biasing of diode and types of biasing.
j) Draw three different biasing configuration of transistor.
k) Write different applications of transistor.
l) Draw AC and DC characteristics o NPN transistor.
m) Derive α and β relationship of transistor.
n) What is virtual ground concept in OPAMP?

SECTION – B

(Answer any 6 Questions) **[6X 6 = 36]**

2. Write short note on zener and avalanche break break-down in case of PN-junction diode.
3. Write short note on Zener diode with its application.
4. Draw positive and negative series clipper and explain the working principle.
5. Draw common emitter transistor amplifier derive total current and show the relation between α and β.
6. Draw the input output characteristics of CE BJT amplifier draw AC, DC, load line.
7. Explain OPAMP as a inverting amplifier with mathematical expression.
8. Explain how transistor acts as a switch?

SECTION – C

(Answer all question) **[3x16 =48]**

9. Convert the following no system

   a) $(1457.238)_8=(\ )_{10}$?
   b) $(1A05.2C4)_{16}=(\ )_{10}$?
   c) $(58.25)_{10}=(\ )_8$?
   d) $(.25.25)_{10}=(\ )_2$?

10. Write ideal and practical OPAMP properties. Draw the circuit diagram of OPANP as non-inverting amplifier and summing amplifier

11. Draw half wave rectifier and explain its operation find I_{dc},V_{dc},I_{rms},V_{rms},P_{dc},P_{ac}, efficiency and ripple factor.