Bankim Sardar College

Internal Examination 2020

Sem: IV Course: Honours Paper: CCH10

Group-A

1. Answer all the Questions- 10x1=10

i) State Thevenin's theorem
ii) State maximum power transfer theorem.
iii) What are semiconductors?
iv) What is rectification?
v) For a transistor what is β?
vi) What is the difference between a transistor and a FET?
vii) What is load regulation?
viii) What are amplifiers?
ix) What is a load line?
x) What is negative feedback?

Group B

2. Answer all Questions 3x10=30

i) Draw the circuit diagram of a differential amplifier with OP AMP
ii) Write its working formula and calculate the output voltage for $V_1 = 0.5$ volt and V_2=0.3 volt with $R_1 = 1$Kiloohm and R_2=10 Kiloohm.
iii) What is voltage gain of the circuit? What type of gain is it and why?

Group C

Answer Question No. 3 and any 6 from the rest.

3. Answer all the Questions 10x2=20

i) What are ripples?
ii) Distinguish between p type and n type semiconductors.
iii) What are L and C filters?
iv) Draw the circuit diagram of a transistor in the CE mode
v) Give an example of a voltage regulator.
vi) What is an emitter follower circuit?
vii) Name one ac application of an op amp.
viii) What is CMRR?
ix) Can a transistor act as a switch?
x) What is Barkhausen criterion?

Answer any six questions

6x5=30

4. Draw the circuit diagram of a half wave rectifier and explain its action.
5. Draw the output characteristics of a transistor in the CE mode and explain the different regions in it.

6. Explain the action of zener diode as a voltage regulator.
7. State the characteristics of an ideal op amp.
8. What do you mean by virtual ground of an op amp?
9. Explain the action of an inverting amplifier using op amp.
10. Draw the circuit diagram of an astable multivibrator using transistors.
11. Draw the circuit diagram of a Wien bridge oscillator using op amp.