SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No: | | | | | | | | | | | | Total number of pages:[2]

B.Tech. || ECE || 3rd Sem

Analog Devices & Circuits

Subject Code: BTEC-301

Paper ID:

Time allowed: 3 Hrs **Max Marks: 60**

Important Instructions:

- **All questions are compulsory**

PART A (10x 2marks)

Q. 1. Short-Answer Questions:

(a) What is Stabilization?
(b) Describe class A Power Amplifier.
(c) What is Barkhausen Criterion?
(d) Describe hybrid equivalent circuit.
(e) What is the origin of transistor?
(f) Differentiate between ac & dc load line.
(g) What do you mean by operating point?
(h) Describe stability factor.
(i) Develop relationship between α and β
(j) Distinguish between FET & BJT.

PART B (5×8marks)

Q. 2. Explain the operation of Photodiode. Draw the Characteristics of the photodiode. CO1

OR

Draw the VI Characteristics of Zener Diode and explain Zener Diode as a voltage regulator. CO1

Q. 3. Explain the input and output characteristics curves of a CE configuration for a transistor. CO2

OR

Explain fixed bias circuit. In a fixed bias circuit, R_B=150kΩ, R_C=2kΩ, V_{CC}=12V. Transistor is silicon with β=100, find I_B. CO2

Q. 4. Discuss transistor phase inverter circuit for push pull amplifier. CO3

OR

Draw and explain the working of push pull class B amplifier. What are its advantages and disadvantages? CO3

Q. 5. Discuss the concept of negative feedback in amplifier in detail. CO4

OR

Explain the working of a Colpitt's oscillator with a neat diagram. CO4

Q. 6. Explain the difference between the enhancement mode MOSFET and depletion mode MOSFETs. CO2

OR

Explain the working of emitter bias circuit. CO2