

Q. P. Code: 23928

3 Hours

Total Marks: 80

Instructions:

1. Question Number 1 is Compulsory.
2. Attempt Any Three from the remaining 5 Questions.
3. Figures to right indicate the full marks.
4. Assume the suitable data if necessary.
- 5.

- Que. 1 Answer **Any FOUR** of the following 20
- a Draw and explain the construction of D-MOSFET
 - b Explain the construction and characteristic of LED and give the applications of it.
 - c Explain in brief the r_e model in BJT
 - d What is necessity of cascading? What is the effect of it?
 - e A Colpitt's Oscillator circuit having two individual capacitors of $0.1\mu\text{F}$ each are designed to resonate in parallel with a variable inductor used is of 0.5mH . Determine the frequency of oscillation.
 - f State the advantages of negative feedback.
- Que. 2 a State the various types of low frequency oscillators and explain any one in detail. 10
- b Explain the features of multistage RC coupled amplifier. Draw the neat circuit diagram of two stage R-C coupled transistor amplifier and also give its frequency response 10
- Que. 3 a State the types of Negative feedback amplifiers and explain current series type amplifier in detail 10
- b Draw and explain the bridge wave rectifier with CLC filter with proper waveforms. 10
- Que. 4 a State the various biasing techniques used in BJT and explain voltage divider biasing technique in detail 10
- b Draw and explain E-type MOSFET in detail with its input and output characteristics. 10
- Que. 5 a Give the complete AC analysis of CE amplifier using either h parameter model or re model. 10
- b Differentiate JFET and MOSFET in terms of symbol, construction, Input impedance, biasing methods used and also source and drain characteristics. 10
- Que 6 Write a short note on **any two** of the following 20
- a AC analysis of CS amplifier
 - b FET Differential Amplifier
 - c Concept of DC load Line used in BJT
