



II B.Tech I Sem Supplementary Examination, July-2022

Analog Electronics

(EEE)

Time: 3 Hours.

Max. Marks: 70

Note: 1. Answer any FIVE questions.

2. Each question carries 14 marks and may have a, b as sub questions.

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| 1 | a) | Illustrate V-I characteristics of a PN-junction Diode and then explain the same. | 7M | C01 | L2 |
| | b) | Draw the Full-wave Rectifier circuit and then explain its operation with the help of waveforms. | 7M | C01 | L2 |
| 2 | | Illustrate input and output characteristics of BJT in CB, CE and CC configurations by clearly indicating different regions. | 14M | C01 | L2 |
| 3 | a) | Draw and explain the structure of MOSFET. | 7M | C02 | L2 |
| | b) | Explain how MOSFET can be used as a Switch. | 7M | C02 | L2 |
| 4 | | With the help of circuit diagram, explain Common-emitter amplifier. Also, draw its small-signal equivalent circuit and then define its gain, input impedance, output impedance. | 14M | C02 | L3 |
| 5 | a) | Explain direct-coupled two-stage Common collector amplifier. | 9M | C03 | L2 |
| | b) | List the advantages and disadvantages of direct coupled and RC coupled amplifiers. | 5M | C03 | L2 |
| 6 | | Draw and explain the operation of Class-A Power amplifier circuits. Also, state advantages and disadvantages. Also, mention conduction angle, efficiency of class-A power amplifier. | 14M | C03 | L3 |
| 7 | a) | Explain the effect of negative feedback on amplifier characteristics. | 7M | C04 | L2 |
| | b) | Draw and explain the RC Phase-shift oscillator circuit. | 7M | C04 | L3 |
| 8 | | Draw and explain Op Amp based square-wave and Triangular wave generators. Also, design Integrator circuit using Op Amp. | 14M | C05 | L4 |