



R18 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

Subject code: 2P3BC

B.Tech III Semester Regular/Supplementary Examinations, February 2021

ELECTRONIC CIRCUITS (Electrical and Electronics Engineering)

Maximum Marks: 70

Date: 22.02.2021 Duration: 3 hours

- Note:**
1. This question paper contains two parts A and B.
 2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
 3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
 4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Define amplifier? List the types of amplifiers?
- 2 What is Miller effect?
- 3 Classify negative feedback amplifiers.
- 4 Write the conditions for Oscillations and its sustenance.
- 5 Mention the achievable Maximum efficiency of Class –A amplifiers.
- 6 Discuss the importance of heat sinks.
- 7 What is high pass circuit?
- 8 Distinguish between comparators and clipping circuits.
- 9 Explain how does diode acts as a switch?
- 10 List the applications of Schmitt trigger?

Part-B

Answer All the following questions.

(10MX 5=50Marks)

- 11 A. Draw the CC amplifier and derive the expression for A_I , R_I , A_V , Y_O . (5M)
B. A CE amplifier is drawn by a voltage source of internal resistance $R_S = 800$ ohms and load impedance is a resistance $R_L = 1000$ ohms. The h-parameters are $h_{ie} = 1.0K$ ohms, $h_{re} = 2 \times 10^{-4}$, $h_{fe} = 50$ and $h_{oe} = 25 \mu A/V$. compute A_I , R_I , A_V and R_o using exact analysis.(5M)

OR

- 12 A. Mention the significance of Gain Bandwidth product of amplifiers.(5M)
B. Draw and explain the effect of coupling and bypass capacitors on low-frequency response of CE Amplifier. (5M)
- 13 Determine the effect of negative feedback on the input and output impedances of a Voltage-Series feedback amplifier. Show the circuit schematic diagram. (10M)

OR

- 14 Discuss the operation of Wein-Bridge oscillator with necessary diagrams.(10M)
- 15 A. Discuss the operation of Transformer coupled Class- A amplifiers with diagram. (5M)
B. What are the draw backs of transformer coupled power amplifier.(5M)

OR

- 16 A. Write the differences between Class A and Class B power amplifiers.(5M)
B. Discuss the concept of Thermal Runway. (5M)
- 17 A. With help of a neat circuit diagram and waveforms explain the working of a negative clamping circuit.(5M)
B. Explain about the Clamping circuit theorem.(5M)

OR

- 18 A. Obtain the response of Low-pass RC circuit for square-input with different time-constants.(5M)
B. Write about the Transfer characteristics of Positive clippers with and without biasing. (5M)
- 19 A. Draw the circuit of Bi-stable Multivibrator and explain its operation.(5M)
B. Discuss in detail about breakdown voltages of a transistor.(5M)

OR

- 20 Write short notes on:
a) Mono-stable Multivibrators.(5M)
b) Switching characteristics of transistors. (5M)