



R17 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY  
(Autonomous, Accredited by NAAC with 'A' Grade)

Subject code: 1P3BE

**B.Tech II Year I Semester Supplementary Examinations, February 2021**  
**Electronic Circuits**

(Electrical and Electronics Engineering)

Maximum Marks: 70

Date: 01.03.2021 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.
  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 Write the advantages of h-parameters of BJT.
- 2 What are the advantages of CC Amplifier?
- 3 Write the need of Negative feedback in amplifiers?
- 4 Define the Barkhausen criterion for oscillations.
- 5 Define Class-C Power Amplifier.
- 6 Define Efficiency of power amplifier.
- 7 Draw a Low-pass RC circuit.
- 8 What is the function of Clamper?
- 9 Write down the applications of Astable Multivibrator?
- 10 Define Schmitt Trigger.

**Part-B**

Answer All the following questions.

(10M X 5=50Marks)

- 11 Using hybrid model circuit, Derive the expression for  $A_i$ ,  $R_i$ ,  $A_v$ ,  $Y_o$  and  $R_o$  of CE Amplifier.  
OR
- 12 Using hybrid model circuit, Derive the expression for  $A_i$ ,  $R_i$ ,  $A_v$ ,  $Y_o$  and  $R_o$  of CC Amplifier.
- 13 Derive Input Resistance ( $R_{if}$ ) and Output Resistance ( $R_{of}$ ) of Voltage Shunt Feedback Amplifier.  
OR
- 14 Describe the working principle of Wien Bridge Oscillator and derive its frequency of oscillation.
- 15 Explain the operation of Transformer Coupled Class-A Power Amplifier and derive its efficiency.  
OR
- 16 Explain the operation of Push-Pull Class-B Power Amplifier and derive its efficiency.
- 17 a) Draw a High-Pass RC circuit and derive its transfer function & cut-off frequency. (5M)  
b) Illustrate the response of Low-Pass RC circuit to a Step input. (5M)

OR

- 18 Define Clipper and Explain the operation of positive and negative diode clippers.
- 19 Explain how transistor acts as a switch & Describe briefly about Transistor Switching times.

OR

- 20 Discuss the operation of BistableMultivibrator& determine its frequency of oscillation.