



R17 Regulation **Subject code: 1P3DB**
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
 (Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech II Year I Semester Supplementary Examinations, February 2021
Analog Electronics

(Electronics and Communication 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.
 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 State Miller's theorem.
- 2 Discuss the effect of bypass capacitor on bandwidth of the amplifier
- 3 Draw Hybrid pi model of BJT.
- 4 What is Gain Bandwidth Product.
- 5 List out the difference between BJT and MOS amplifiers.
- 6 Draw the frequency response curve of multi stage amplifier. How to identify the bandwidth.
- 7 What is the effect of negative feedback on circuit ?
- 8 Mention the two conditions for sustained oscillations.
- 9 What is cross over distortion in class B power amplifier?
- 10 A tuned circuit has resonant frequency of 1600 kHz and a bandwidth of 10 kHz . What is the value of its Q-factor?

Part-B

Answer All the following questions.

(10M X 5=50Marks)

- 11 Analyze CE amplifier using h-Parameter and derive the expression for Gain, input and output impedance. (10M)

OR

- 12 Explain about two stage RC coupled Cascade amplifier and derive its overall gain.(10M)
- 13 Draw the high frequency hybrid pi equivalent circuit of BJT and explain its parameters. (10M)

OR

- 14 Derive the expression for CE short circuit current gain with resistive load. (10M)

15 Derive Gain, input and output impedance of common source JFET amplifier with neat circuit diagram and equivalent circuit. (10M)

OR

16 Derive Gain, input and output impedance of MOSFET source Follower amplifier with neat circuit diagram and equivalent circuit. (10M)

17 Draw the Block diagram of current feedback amplifiers and derive an expression for input resistance, voltage gain and output resistance. (10M)

OR

18 Sketch the circuit of RC phase shift oscillator and explain its design approach. (10M)

19 Draw and explain the working of class B pushpull power amplifier. Also derive its maximum efficiency. List the advantages and disadvantages. (10M)

OR

20 Demonstrate on single tuned amplifier and derive for gain and resonant frequency. (10M)