



Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

BTECH
(SEM IV) THEORY EXAMINATION 2021-22
ANALOG ELECTRONICS

Time: 3 Hours**Total Marks: 100****Note:** Attempt all Sections. If you require any missing data, then choose suitably.**SECTION A****1. Attempt all questions in brief.****2x10 = 20**

Qno	Questions	CO
(a)	What do you mean by amplifier?	1
(b)	What is the value of gain for emitter follower?	1
(c)	Define phase margin.	2
(d)	Discuss the effect of negative feedback on input resistance of amplifier.	2
(e)	Explain Barkhausen criterion for oscillation.	3
(f)	What type of feedback is used in oscillators?	3
(g)	Define common mode gain.	4
(h)	Discuss CMRR.	4
(i)	Discuss active filters.	5
(j)	What do you mean by virtual ground?	5

SECTION B**2. Attempt any three of the following:****10x3 = 30**

Qno	Questions	CO
(a)	Explain voltage amplifier with the help of circuit diagram.	1
(b)	Illustrate the working of cascode amplifier and its advantage.	2
(c)	Explain the working of Wein Bridge oscillator.	3
(d)	Derive expression for gain of differential amplifier.	4
(e)	Discuss Band Stop active filter.	5

SECTION C**3. Attempt any one part of the following:****10x1 = 10**

Qno	Questions	CO
(a)	What is meant by transistor-biasing? Define stability factor.	1
(b)	Explain different small signal performance parameters and how they are calculated.	1

4. Attempt any one part of the following:**10x1 = 10**

Qno	Questions	CO
(a)	Explain various feedback topologies.	2
(b)	Discuss working and efficiency of class AB amplifier.	2

5. Attempt any one part of the following:**10x1 = 10**

Qno	Questions	CO
(a)	Describe Colpitt oscillator.	3
(b)	Describe Clapp oscillator.	3

6. Attempt any one part of the following:**10x1 = 10**

Qno	Questions	CO
(a)	Explain Wilson current mirror.	4
(b)	Describe gain stages and output stage in operational amplifier.	4

7. Attempt any one part of the following:**10x1 = 10**

Qno	Questions	CO
(a)	Explain the working of Precision rectifier.	5
(b)	Describe the operation of Schmitt trigger.	5