SRM Institute of Science and Technology
College of Engineering and Technology

DEPARTMENT OF ECE

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamilnadu

OFFLINE MODE

SET D

Academic Year: 2021-2022 (EVEN)

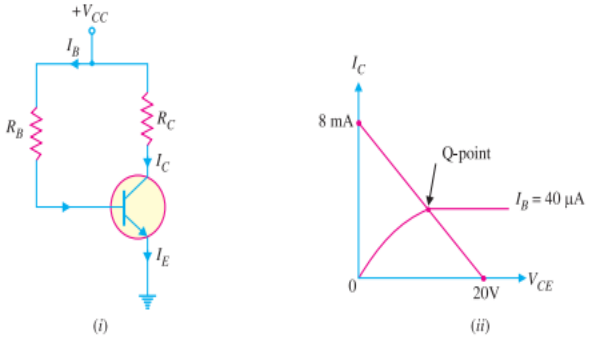
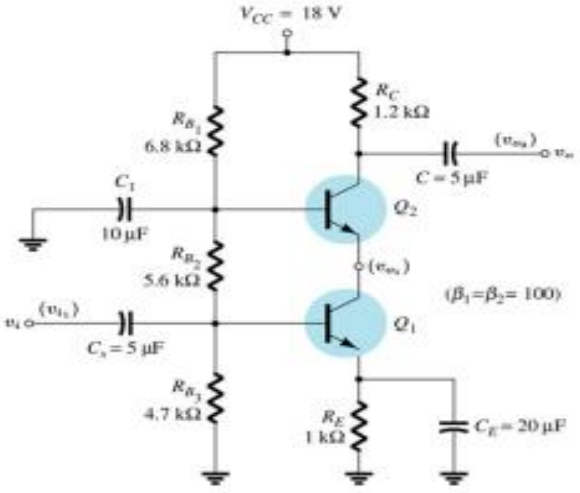
Test: CLAT- 1 **Date: 07-04-2022**
Course Code & Title: 18ECC201J – Analog Electronic Circuits **Duration:** 60 minutes
Year & Sem: II / IV **Max. Marks:** 25

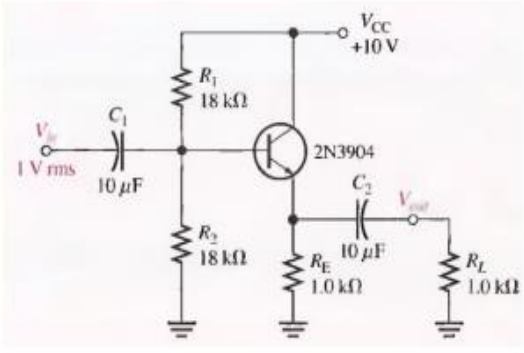
Course Articulation Matrix:

	18ECC201J - Analog Electronic Circuits	Program Outcomes (POs)														
		Graduate Attributes												PSO		
COs	Course Outcomes (COs)	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
CO-1 :	Analyze bipolar amplifier circuits and their frequency response.	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-
CO-2 :	Develop MOSFET amplifier circuits and their frequency response.	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-
CO-3 :	Compile various negative feedback amplifier and oscillator circuits.	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-
CO-4 :	Demonstrate the different classes of power amplifiers according to their performance characteristics.	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-
CO-5 :	Construct the basic circuit building blocks that are used in the design of IC amplifiers, namely current mirrors and sources.	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-
CO-6 :	Organize analog electronic circuits using discrete components to measure various analog circuits' performance.	-	-	3	-	-	-	-	-	2	-	-	-	3	1	-

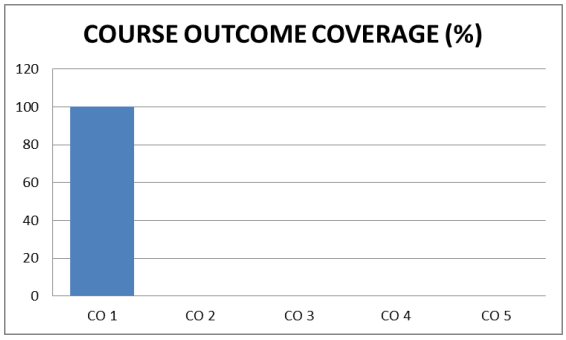
Part - A
(5 x 1 = 5 Marks)
Instructions: Answer all 5Questions

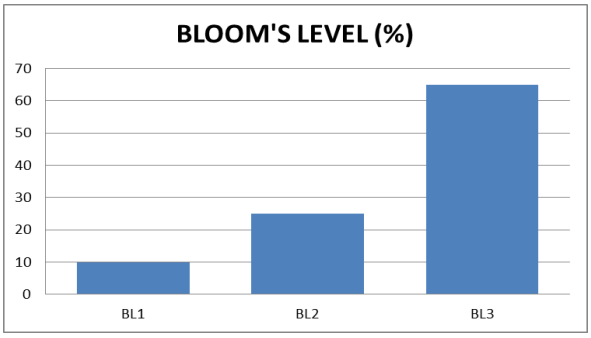
Q. No	Question	Marks	BL	CO	PO	PI Code
1	The process of raising the strength of a weak signal without any change its general shape is known as_____ a. Rectification b. Oscillation c. Amplification d. Faithful Amplification	1	1	1	1	
2	The d.c. load of a transistor amplifier is generally ..... that of a.c. load. a. Equal to b. Less than c. Greater than d. opposite	1	2	1	1	
3	Determine the value of r_π if the I_C = 2.16mA. Assume β=100 and V_A=∞. a. 1Ω b. 2Ω c. 1.2kΩ d. 0.5kΩ	1	3	1	2	
4	The transistor has base current of 20μA and collector current of 1mA. The value of α is…… a.0.9 b.0.83 c. 1 d. 0.99	1	3	1	2	

5	The Darlington amplifier is a _____ configuration multistage amplifier. a. CE-CE b. CB-CE c. CC-CC d. Both a and c	**1**	**1**	**1**	**1**	
	Part – B **(2 x 10 = 20 Marks)** **Instructions: Answer any TWO**					
6.	**a.** Is it possible to use a fixed bias circuit for linear amplification? If not give the justification. Also, mention the suitable application of the fixed bias circuit. **b.** Fig. 1(i) shows the fixed bias circuit. The transistor has the output characteristic shown in Fig. 1(ii). Determine V_{CC}, R_C and R_B.  **Fig. 1**	**4** 6	**2** 3	**1** 1	**2** 3	
7.	**a.** What is cascode amplifier? List the characteristics of cascode amplifier. **b.** For the cascode amplifier shown in Fig.2. (i) Represent the given circuit by its AC equivalent circuit and obtain expression for voltage gain. (3 Marks) (ii) Determine the value of voltage gain. Assume I_{EQ1}=4.2mA, β=100 and V_{BE}=0.7V.(3 Marks)  **Fig.2**	**4** 6	**2** 3	**1** 1	**1** 2	
8	**a.** Why does CC amplifier known as Emitter	**2**	**1**	**1**	**1**	

	follower? **b.** For the CC amplifier shown in Fig.3 (i) Represent the given circuit by its AC equivalent and obtain expression for input impedance (ii) Determine the value of input impedance .Assume I_{CQ}=4.3mA, β=175 and V_{BE}=0.7V.  **Fig. 3**	4 4	3 3	1 1	2 2	

Course Outcome (CO) and Bloom's level (BL) Coverage in Questions





Evaluation Sheet

Name of the Student:

Register No.:

		Part- A ALL FIVE (5x 1= 5 Marks)		
Q. No	**CO**	**Marks Allotted**	**Marks Obtained**	**Total**
1	**1**	**1**		
2	**1**	1		
3	**1**	1		
4	**1**	1		
5	**1**	1		
Part- B Any TWO (2 x 10= 20 Marks)				
6.a	**1**	**4**		
6.a	**1**	**6**		
7.a.	**1**	**4**		
7.b.	**1**	**6**		
8.a	**1**	**2**		
8.b.	**1**	**8**		

Consolidated Marks:

CO	Marks Allotted	Marks Scored
CO1	25	
Total	25	

Approved by the Course Coordinator