D.Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY
KASABA BAWADA, KOLHAPUR-416006
(An Autonomous Institute)
S. Y. B. Tech
END SEMESTER EXAMINATION, JULY 2021-22
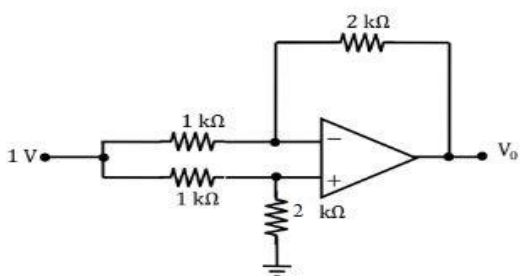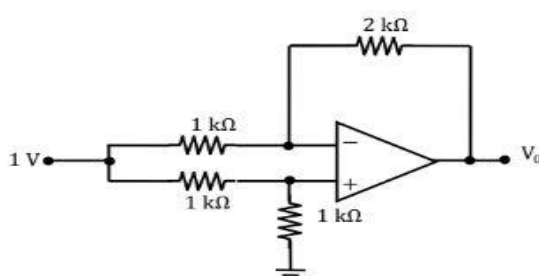Course Name: Linear Integrated Circuits ,Course Code: 201ETL215
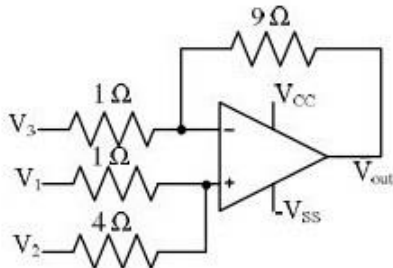
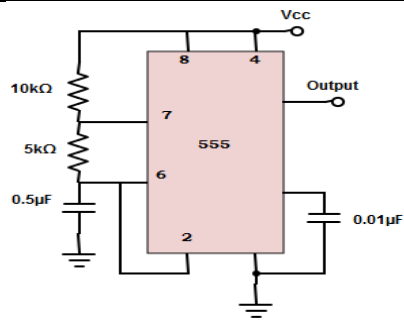**Day and Date: Friday 24/06/2022**
Time: 9.30 am to 1.15 pm

Seat No:

Max. Marks- 100

Instructions:
i. Question No. 1 is compulsory.
ii. Figure to the right indicate full marks.
iii. Give suitable general Instructions

BT	CO's	Q. No.		Marks
		Q.1	**Attempt the following**	**40**
L1 L2	CO1	a	i)Explain block diagram of Operational amplifier ii)Draw AC Equivalent circuit diagram of DIBO Differential amplifier & Derive the equation for Voltage gain A_d.	4 6
L1 L1 L2	CO1	b	i)Draw & Describe high frequency equivalent circuits diagram of an op amp. ii) Draw & Describe voltage transfer characteristics of an op amp. iii) Define slew rate and describe effect of slew rate on sinusoidal signal.	3 3 4
L2 L2	CO2	c	For the Op-amp circuit shown in the figure, V_0 is i) For the Op-amp circuit shown in the figure, V_0 is ii)	5 5

L1	**CO3**	**d**	i) Explain antilog amplifier using op amp.		**5**
L2			ii) For the circuit shown below, taking the opamp as ideal, the output voltage V_{out} if V_1, V_2 and V_3 1 Volt each		**5**

		Q.2	**Attempt the following**	**20**
L1		**a**	Draw and explain First order Low pass Butterworth filter.	**6**
L1	**CO4**	**b**	Draw & Explain Band reject filter.	**7**
L3		**c**	Design a second order low pass filter at a high cutoff frequency of 1kHz . **OR** Design a second order High pass filter at a low cutoff frequency of 1kHz.	**7**

		Q.3	**Attempt the following**	**20**
L1		**a**	Draw & explain saw-tooth wave generator circuits.	**6**
L1	**CO5**	**b**	Describe RC Phase shift oscillator.	**7**
L1		**c**	With neat diagram explain Wien bridge oscillator. OR Draw square wave generator circuit using op amp. Derive equation for frequency of oscillation.	**7**

		Q.4	**Attempt the following**	**20**
L1		**a**	Draw & explain the block diagram of PLL	6
L1	**CO6**	**b**	Draw and explain the Monostable multivibrator using 555 Timer	7
L2		**c**	Find frequency of oscillation and duty cycle at output for given figure.	7

OR

Find frequency of oscillation and duty cycle at output for given figure.

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