

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/  
COMMERCIAL PRACTICE, APRIL - 2025**

**LINEAR INTEGRATED CIRCUITS**

[Maximum marks: 75]

[Time: 3 Hours]

**PART A**

**I. Answer all the following questions in one word or one sentence. Each question carries 1 mark.**

**(9 x 1 = 9 Marks)**

		Module outcome	Cognitive level
1	CMRR means.....	M1.01	U
2	Ideal value of input resistance of OP-AMP is .....	M1.03	U
3	In block diagram output stage of OP-AMP is .....	M1.02	U
4	What is UTP?	M2.05	A
5	In 555 IC, the VCC pin number is .....	M3.01	U
6	The output equation of Differrator is .....	M2.02	A
7	Mono stable has ..... number of stable state.	M3.02	U
8	The output voltage of 7905 IC is .....	M4.01	U
9	Fixed voltage regulator IC has ..... terminals.	M4.01	U

**PART B**

**II. Answer any eight questions from the following. Each question carries 3 marks.**

**(8 x 3 = 24 Marks)**

		Module outcome	Cognitive level
1	Draw the pin diagram of IC 741.	M1.02	U
2	Draw the circuit diagram of differential amplifier using BJT.	M1.01	U
3	Draw and explain voltage follower circuit.	M1.04	U
4	Draw the inverting adder circuit using OP-AMP.	M2.01	A
5	Draw the differentiator circuit using OP-AMP.	M2.02	A
6	List the features of 555Timer.	M3.01	U
7	Draw the pin diagram of IC 565.	M3.03	U
8	Draw the basic block diagram of PLL.	M3.03	U
9	Draw the pin diagram of IC 723.	M4.01	U
10	Draw the circuit diagram of weighted resistor type DAC.	M4.03	U

**PART C**

**Answer all questions. Each question carries seven marks.**

**(6 x 7 = 42 Marks)**

		<b>Module outcome</b>	<b>Cognitive level</b>
III	Draw and explain OP-AMP block diagram. <b>OR</b>	M1.02	U
IV	Explain the equivalent circuit of OP-AMP.	M1.02	U
V	Explain the ideal parameters of OP-AMP. <b>OR</b>	M1.03	U
VI	Draw and explain open loop OP-AMP configurations.	M1.03	U
VII	Draw and explain Astable multivibrator circuit using OP-AMP. <b>OR</b>	M2.04	A
VIII	Draw the circuit diagram of square wave generator using OP-AMP and explain its working.	M2.04	A
IX	Draw and explain the functional block diagram of 555 IC. <b>OR</b>	M3.02	U
X	Draw the circuit diagram of Monostable multivibrator using 555 IC and explain the working.	M3.02	A
XI	Draw and explain R - 2R ladder type DAC. <b>OR</b>	M4.03	U
XII	Draw and explain counter ramp type ADC.	M4.02	U
XIII	Draw and explain flash type ADC. <b>OR</b>	M4.02	U
XIV	Explain the working of opto-coupler with the help of block diagram.	M4.01	U

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