

Reg.No.:

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VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 120027

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – JAN. 2026
Fourth Semester
Biomedical Engineering
U23BM409 – ANALOG AND DIGITAL INTEGRATED CIRCUITS
(Regulation 2023)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	Draw the internal schematic block diagram of an op-amp.	2	K1	CO1
2.	What can you infer from the term thermal drift?	2	K2	CO1
3.	Give the condition for good differentiator operation.	2	K1	CO2
4.	Infer the potential applications of an all-pass filter based on its phase-shifting properties.	2	K2	CO2
5.	Define lock-in range & capture range of a PLL.	2	K1	CO3
6.	Compare the monostable and astable operations of a 555 Timer IC.	2	K2	CO3
7.	Define the terms resolution and accuracy in DACs.	2	K2	CO4
8.	List the applications of successive approximation type ADC.	2	K1	CO4
9.	How would you rephrase the term priority encoder?	2	K2	CO5
10.	What are the two possible states of a JK flip-flop?	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Elaborately discuss the open – loop configurations of op-amp, based on the number of inputs used and the terminal to which the input is applied.	13	K2	CO1

