Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S3 (R) Examination November 2025 (2024 Scheme)

Course Code: PBMRT304

Course Name: ANALOG ELECTRONICS

Max. Marks: 40 Duration: 2 hours 30 minutes

PART A

(Answer all questions. Each question carries 2 marks) CO Marks

1	Differentiate BJT and FET	CO1	(2)
2	Draw the circuit diagram of CE Amplifier	CO1	(2)
3	What you meant by feedback circuits? Classify feedback networks	CO2	(2)
4	What is PLL	CO2	(2)
5	Write about the parameters of op-amp	CO3	(2)
6	A first-order LPF has R = 10 kΩ, C = 0.01 μF. Find the cut off frequency.	CO3	(2)
7	Classify types of ADC and DAC circuits	CO4	(2)
8	Calculate the resolution of an 8-bit DAC with a 5 V reference voltage.	CO4	(2)

PART B

(Answer any one full question from each module, each question carries 6 marks)

Module -1

9	a)	Prove that the maximum conversion efficiency of a Class B power amplifier is 75%.	CO1	(6)
10	a)	A UJT has VBB = 25 V and η= 0.65. If the diode drop is 0.7 V, calculate the peak point voltage. State two applications of UJT with their advantages.	CO1	(6)

Module -2

11	a)	Draw and explain the working of a monostable multivibrator using IC555 timer	CO2	(6)
12	a)	Draw and explain the functioning of Colpitts oscillator	CO2	(6)

Module -3

13	a)	Draw and explain the working of Integrator and Differentiator using op amp	CO3	(6)
14	a)	What is a sample and hold circuit? Explain working with neat diagram	CO3	(6)

Module -4

15	a)	Explain the working of a Successive Approximation ADC with a block diagram. A system with an 8-bit resolution and clock of 1 MHz is given. Calculate conversion time.	CO4	(6)
16	a)	Draw the diagram of Wein bridge oscillator and explain its working	CO4	(6)

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