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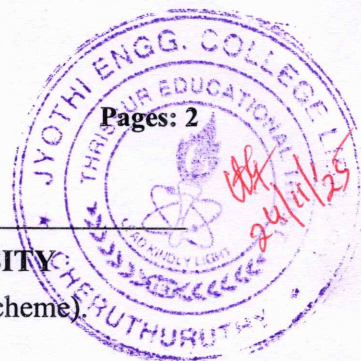
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Reg No.: \_\_\_\_\_

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 $R = 10 \text{ k}\Omega$ , $C = 0.01 \mu\text{F}$ . 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 $V_{BB} = 25 \text{ V}$ and $\eta = 0.65$ . 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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