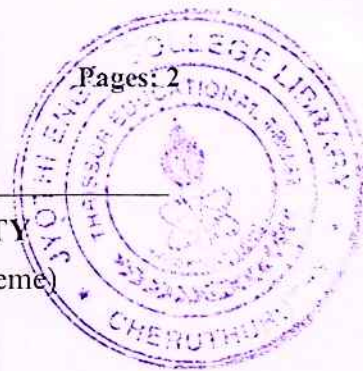


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
B.Tech Degree S3 (S) Examinations (FT/WP) May 2026 (2024 Scheme)



Course Code: PBEET304

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	What is an emitter follower amplifier. Give its applications.	1	(2)
2	Draw and explain Common Emitter AC equivalent circuit of a transistor amplifier.	1	(2)
3	With a neat diagram, explain the construction of n-channel JFET.	1	(2)
4	Explain crystal oscillator.	2	(2)
5	Define the terms i) CMRR and ii) Slew rate.	3	(2)
6	What are the characteristics of ideal Op-Amp?	3	(2)
7	What is active filter? How they are classified based on their frequency response.	4	(2)
8	Draw and explain first order lowpass Butterworth filter	4	(2)

PART B

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

Module -1

- 9 Derive the equation for input impedance, voltage gain and current gain for a BJT using approximate h-parameter model for Common Emitter configuration. 1 (6)
- 10 Draw and explain a class AB amplifier and how does the class AB amplifier eliminate crossover distortion? 1 (6)

Module -2

- 11 With neat diagram, explain construction and operation of enhancement MOSFET. 1 (6)
- 12 Design an RC phase shift oscillator using BJT for an oscillating frequency of 1 kHz. 2 (6)

Module -3

- 13 Explain closed loop configuration of inverting amplifier using Op-Amp. Derive the equation for voltage gain. 3 (6)
- 14 Describe the operation of Schmitt trigger circuit using Op-Amp with neat circuit diagram and waveforms. 3 (6)

Module -4

- 15 Explain the working of a square wave generator circuit using Op-Amp with necessary diagrams and waveforms. 3 (6)
- 16 Explain the functional block diagram of 555 Timer IC 3 (6)
