QP Code: D141275	Total Pages: 1	Name: 761772
		Register No.

SECOND SEMESTER (CUFYUGP) DEGREE EXAMINATION, APRIL 2026

APPLIED PHYSICS / PHYSICS

APH2CJ101 / PHY2CJ101: Electronics I

2024 Admission onwards

Maximum Time :2 Hours | **Maximum Marks :70**

Section A

All Questions can be answered. Each Question carries 3 marks (Ceiling : 24 Marks)

1	What do you understand by extrinsic and intrinsic semiconductors?
2	What are the limitations in the operating conditions of PN junction?
3	What are the different types of filter circuits used in rectifiers?
4	Define ripple factor? What is its value in the case of a full wave rectifier?
5	What do you mean by knee voltage?
6	Which are the most commonly used semiconductors and why?
7	What is a LED?
8	What are the specialties of a Zener diode?
9	Differentiate between Analog and Digital Signals ?
10	Explain BCD ?

Section B

All Questions can be answered. Each Question carries 6 marks (Ceiling : 36 Marks)

11	A half wave rectifier uses a transformer of a turn ratio 6:1. The load resistance is 800 Ω. If the primary voltage in rms is 240 V, find the DC output voltage and peak inverse voltage ?
12	With a neat circuit diagram, Draw the input and output characteristics of a BJT in CE configuration
13	Calculate the peak voltage across each half of a center-tapped transformer used in a full wave rectifier that has an average output voltage of 110 V ?
14	Define β and derive a relation between α and β ?
15	Explain the meaning of faithful amplification with necessary diagrams?
16	(i)Convert $(25)_{10}$ to Binary (ii)Convert $(45)_{10}$ to Binary (iii)Convert $(2A)_{16}$ to Decimal (iv) Convert $(3F7)_{16}$ to Decimal
17	Draw the circuit diagram of a voltage doubler and explain the working ?
18	In a common base connection, the current amplification factor is 0.9. if the emitte current is 1mA, find the value of the base current. ?

Section C

Answer any ONE . Each Question carries 10 marks (1x10=10 Marks)

19	Draw neat sketches of a half wave and a full wave rectifier and explain working?
20	What do you mean by biasing of a transistor ? Describe any two methods for transistor biasing ?