

This question paper contains 2 printed pages]

NA—53—2023

FACULTY OF SCIENCE

B.Sc. (Second Year) (Fourth Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(New Pattern)

PHYSICS

Paper—IX

(Basic Electronics)

(Tuesday, 12-12-2023)

Time : 2.00 p.m. to 4.00 p.m.

Time—2 Hours

Maximum Marks—40

N.B. :— All questions are compulsory.

1. What is common base connection ? Explain input and output characteristics of it. 15

Or

(a) Explain theory and working of LED. 8

(b) What is photodiode ? How does it work ? 7

2. Explain with neat circuit diagram inverting and non-inverting operational amplifier. 15

Or

(a) Explain phase-shift oscillator with circuit operation, advantages and disadvantages. 8

P.T.O.

WT

(2)

NA—53—2023

- (b) Explain the operation of oscillatory circuit, with neat diagram of waveform and frequency of oscillation. 7
3. Write short notes on any *two* (each of 5 marks) : 10
- (a) Zener diode
 - (b) Hybrid parameter
 - (c) Common mode and differential mode signals
 - (d) Barkhausen criteria.