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SA—53—2025

FACULTY OF SCIENCE

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

APRIL/MAY, 2025

(CBCS/New Pattern)

PHYSICS

Paper IX

(Basic Electronics)

(Saturday, 19-4-2025)

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

Time—Two Hours

Maximum Marks—40

Note :—All questions are compulsory and carry equal marks.

1. Draw neat labelled circuit diagram of CE transistor and explain its input and output characteristics. 15

Or

- (a) Explain zener diode and light emitting diode. 8
- (b) Explain P-N junction diode with V-I characteristics. 7
2. Explain the principle and working of phase shift oscillator with a neat labelled diagram. 15

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Or

- (a) Explain slew rate and CMRR. 8
- (b) Explain non-inverting amplifier. Obtain an expression for its voltage gain. 7
3. Write short notes on any *two* (each of 5 marks) : 10
- (a) Photo-diode
- (b) Determination of h-parameter.
- (c) Input offset current and input bias current
- (d) Barkhausen criterion.

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