

B.Sc. Semester-3 Examination**202 - Electronics****Time : 2-30 Hours]****January-2026****[Max. Marks : 70**

- Instructions :** (1) All question carry equal marks.
 (2) All questions are compulsory.

- 1 (a) Explain transformation of impedances with tapped resonant circuit. 07
 (b) Explain reactance T networks for impedance transformation in detail. 07

OR

- 1 (a) Explain tapped anti resonance circuit for impedance transformation with equation. 07
 (b) Explain transformation of impedance with tapped resonant circuit. 07

- 2 (a) Explain how a low pass RC circuit behave as an integrator. 07
 (b) Explain how a high pass RC circuit behave as a differentiator. 07

OR

- 2 (a) What do you understand by Filters? Explain the neper and the decibel and explain relation between them. 07
 (b) Derive equation for the characteristic impedance of a symmetrical T-section. 07

- 3 Explain the adder-subtractor circuit with proper example in detail. 14

OR

- 3 (a) Explain the schmitt trigger operation of the IC 555. 07
 (b) Explain the Astable Multivibrator operation of the IC 555. 07

- 4 Explain Data transfer, Arithmetic, Logical, Branch instruction with atleast 3 examples. Also discuss 8085 programing model. 14

OR

- 4 (a) Explain Large Computers, Medium size computers and Microcomputers in detail. 07
 (b) Explain Machine language, Assembly language and High level language in detail. 07

- 5 Attempt (Any seven) : 14

- (1) What is the condition of critical coupling?
 (2) What is mutual inductance?
 (3) Why parallel LC circuit is used as power absorbing Load on a generator with large internal resistance?
 (4) How decibel 'dB' is defined?
 (5) What does Weber Fechner Law States?
 (6) What is a Square Wave?
 (7) Define monostable circuit.
 (8) Draw a truth table 3 input X-OR gate.
 (9) Explain the meaning of positive and negative edge triggering.
 (10) What are Op-code and Operand?
 (11) Give example of two byte and three byte instruction.
 (12) How many bits does a nibble and byte have?