

B.Sc Semester-4 Examination

CC-205

Electronics

April-2024

[Max. Marks : 70]

Time : 2-30 Hours]

- Instructions:** (1) All questions carry equal marks
 (2) The symbols have their usual meanings & figures to the right indicate marks.

- 1 (A) Explain use of partial function expansion in analysis using Laplace transformation. 7
 (B) Explain step response of Series R-L Circuit to exponential driving voltage. 7

OR

- (A) Explain Heaviside's partial fraction expansion theorem. 7
 (B) Explain Response of Series R-L-C Circuit to exponential driving voltage in detail. 7

- 2 (A) Discuss in detail regarding Evaluation of Fourier Coefficients. 7
 (B) Explain the following in detail with the help of figure: (a) Impulse function (b) The Signum Function Sgn (t) and (c) The unit step function. 7

OR

- (A) With figures explain Even functions and Odd functions. Explain summation of even and odd functions. 7
 (B) Explain the following in detail with the help of figures: (a) Rectangular Pulse and (b) Exponential Pulse. 7

- 3 (A) Explain Clocked D flip-flops with Logic diagram, symbol, truth table and waveforms. 7
 (B) With DIP pinout & logic diagram explain Serial In-Parallel Out 8-bit shift register. 7

OR

- (A) Explain Edge-Triggered D flip-flop with positive-edge-triggered D flip-flop, PRESET and CLEAR functions and D flip-flop symbols. 7
 (B) With logic diagram & wave forms explain Parallel In-Serial Out 8-bit shift register. 7

- 4 (A) List the four operations performed by microprocessor. Define data bus & control bus. 7
 (B) Explain in detail about Memory Classification. 7

OR

- (A) Compare Peripheral-Mapped I/O with Memory-Mapped I/O. 7
 (B) Explain Tri-state devices, Buffer and Decoder in detail with the help of figures. 7

- 5 Attempt any SEVEN out of twelve. 14

- 1 The Laplace of te^{at} is _____.
- 2 The Laplace of $1-e^{at}$ is _____.
- 3 The Laplace transform of $e^{-at} \cos \omega t$ is _____.
- 4 For any odd function $f(t)$, the even part f_e is equal to _____.
- 5 The Fourier series expansion of an odd periodic function contains only _____ terms.
- 6 The Fourier series expansion of a periodic function with half wave symmetry contains only _____ harmonics.
- 7 A flip-flop is an electronic circuit that has _____ stable states.
- 8 A _____ is simply a group of flip-flops that can be used to store a binary number.
- 9 Johnson counter is also called _____ counter.
- 10 In 8085 MPU, data bus is group of _____ lines.
- 11 The _____ data lines enable the MPU to manipulate 8-bit data ranging from 00 to FF.
- 12 The buffer is a logic circuit that amplifies the current or _____.

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