TE-103

May-2013

B.Sc. Sem. IV

205-Electronics

Time : 3 Hours]   [Max. Marks : 70

Instruction: (1)   All questions carry equal marks.

(2)   Symbols shows normal meaning.

(3)   Numbers at right denotes marks.

1.   What is "Laplace Transformation" ? Which are the main advantages over classical method ? Draw the flow sheet of operations in multiplication using logarithm and flow diagram of operation in solving a network using Laplace transformation. Explain them in your words.   **14**

OR

List the application of the Laplace Transformation in "Analysing simple networks and discuss any one in detail with suitable diagrams."

2.   What is "Fourier Series" ? Draw the "Train of rectangular pulses, train of triangular and continuous periodic signal of unrecognizable shape. Explain them in detail and discuss the fourier analysis plots of fourier series components and the amplitude and phase spectra.   **14**

OR

Discuss the steady state response to periodic signals in detail with necessary formulas.

3.   What is "Flip-Flop" ? Discuss the R-S flip-flop using "Bistable devices" and "NOR-gate Latch" separately with suitable logic circuits and truth tables.   **14**

OR

What is "Registers" ? State type of shift-registers and discuss any one in detail with its specific logic diagram and timing wave forms.

4.   What is "MPU" ? Draw the 8085 MPU bus structure and discuss each in detail. Which are the main primary four operations normally performed by MPU ?   **14**

OR

What is "Memory" ? Draw memory classification tree for 8-bit MPU. Discuss any five in detail.

5.   Answer the following :   **14**

    (1)   What is "Primary Memory" ?

    (2)   What is "Bus" ?

    (3)   What is "ALU" ?

    (4)   Define : Microprocessor.

    (5)   "UART" stands for what ?

    (6)   What is "Masked Rom" ?

    (7)   Which system is bidirectional for 8085 MPU ?

    (8)   IC 7495 denotes what ?

    (9)   What is "FSM" ?

    (10) Write the formula for Inverse Transform for fourier series.

    (11) Draw the magnitude spectrum of a unit step function u(t).

    (12) What is the difference between Amplitude Spectrum and Phase Spectrum ?

    (13) What is "Flag" ? in 8085 microprocessor ?

    (14) What is the function of the "Accumulator" ?

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