Set II

B.Sc. Semester- I (Electronics)

Title: Electronic Circuit Analysis | Course Code: UETTC-101

Credits: 04 | Max Marks: 80

Time allotted: 3:00 hours

Note: The Question paper contains three sections A, B and C.

SECTION- A

Note: It contains 05 short answer type questions carrying 3 marks each. All the questions in this section are compulsory.

Q1. Three equal resistances of 10Ω are connected in delta. Calculate the resistance in one of the arms of an equivalent star circuit.

Q2. In a series RLC circuit, if C is increased, what happens to the resonant frequency?

Q3. Find the Laplace transform of function $f(t) = Cos^2 5t$.

Q4. Define transmission parameters A and B of a two-port network.

Q5. Discuss working of *m*-derived high pass filter.

SECTION- B

Note: -It contains 5 short answer type questions and each question carries 7 marks. All questions are compulsory.

Q1: Explain Millman's theorem with the help of suitable example.

Q2: Explain frequency response of a Parallel RLC circuit.

Q3. Explain the differentiation and integration property of Laplace transform.

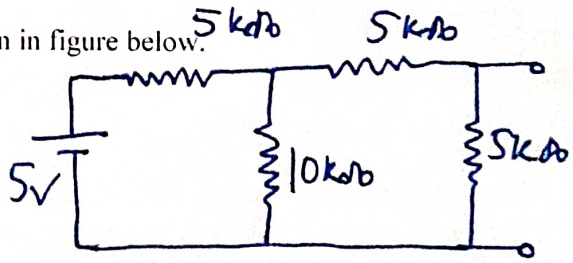
Q4: Discuss the Z parameters of a two-port network.

Q5. Discuss in detail the principle and working of *m*-derived Low pass filter.

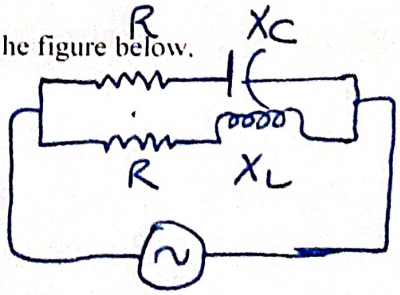
SECTION- C

Note: - It contains 5 long answer type questions carrying 15 marks each. Attempt any 2.

Q1: Determine Norton's equivalent circuit for the given circuit shown in figure below.



Q2. Find the resonant frequency in the ideal parallel LC circuit shown in the figure below.



Q3. Determine the inverse Laplace transform of the function $F(s) = \log (s^2-1)/s(s-1)$

Q4. If the parameters of a two port network are $Z_{11} = 500\Omega$, $Z_{22} = 700\Omega$, $Z_{12} = Z_{21} = 300\Omega$. Find the equivalent ABCD parameters.

Q5. Find an expression for the characteristic impedance and propagation constant of T network.