MAX. MARKS: 20

TIME: 45 MINS

1. The ABCD parameters of the two port network given in Fig. 1 are $\begin{bmatrix} 4 & 20 \\ 0.1 & 2 \end{bmatrix}$. Find the value of load resistance R_L for maximum power transfer and the maximum power transferred to the variable load.   5 Marks
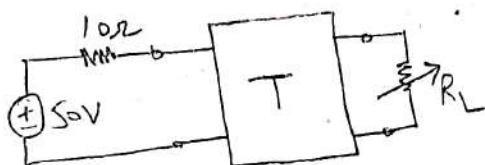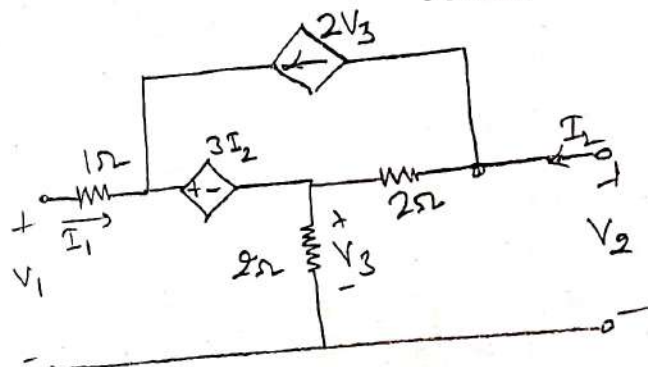

Fig. 1

Fig. 2

2. In Fig. 2, find the z parameters.   4 Marks
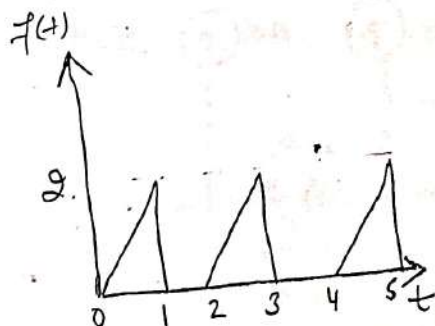3. Find the Laplace transform of the periodic function given in Fig 3.   4 Marks
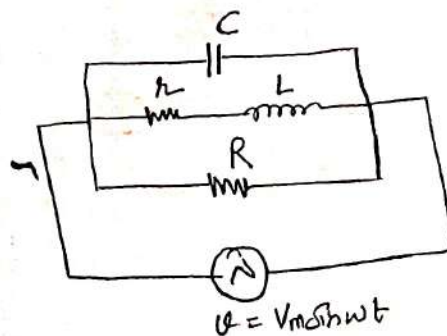

Fig. 3

Fig. 4

4. Derive the expression for resonant frequency for the parallel circuit shown in Fig. 4.   4 Marks

5. A series RLC circuit has a quality factor of 5 at 50 rad/sec. The current flowing through the circuit at resonance is 10A and the supply voltage is 100V. Find the circuit elements   3 Marks