Mod 3

### **1. What is the impedance of an inductor L in the s-domain?**

a) R  
b) 1/(sL)  
c) sL  
d) 1/R

**Answer:** c) sL

### **2. What is the admittance of a capacitor C in the s-domain?**

a) 1/(sC)  
b) sC  
c) sR  
d) s2C

**Answer:** b) sC

**3.The transfer function of a system is defined as:**

a) The ratio of the input to the output in the s-domain.

b) The ratio of the output to the input in the time domain.

c) The ratio of the output to the input in the s-domain.

d) The product of the input and output in the s-domain

**Answer:** c) The ratio of the output to the input in the s-domain.

### **4. In sinusoidal steady-state analysis of coupled circuits, the mutual inductance M is represented by:**

a) jωM  
b) M/(jω)  
c) sM  
d) 1/(sM)

**Answer:** a) jωM

### **5. A transfer function is given as H(s)=s+2s2+4s+5H(s) = \frac{s + 2}{s^2 + 4s + 5}H(s)=s2+4s+5s+2​. Find the locations of the poles of this system:**

a) −2,−3  
b) −2±j  
c) −1,−2  
d) −4±j

**Answer:** b) −2±j  
**Solution:** Poles are obtained by solving s2+4s+5=0