

- Q.30 What is difference between active and passive filter, Explain in detail.
- Q.31 Write a short note on Infinite Line.
- Q.32 Explain various methods of loading in transmission line.
- Q.33 Draw a prototype band pass filter to match with a load of  $500 \Omega$  and cut off frequency 4 KHz also find resonant frequency.
- Q.34 What is a stub? Why it is used?
- Q.35 What do you understand by  $\Pi$ (PI) type of transmission line?

#### **SECTION-D**

- Note:** Long answer type questions. Attempt any two questions out of three questions.  $(2 \times 10 = 20)$
- Q.36 What is a symmetrical network? Explain concept of propagation constant and attenuation constant in a symmetrical 'T' network.
- Q.37 Write a short note on
- a) Band Pass Filter
  - b) SWR and VSWR
- Q.38 What are the various type of distortion in transmission line and also explain the condition for minimum distortion.

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#### **4th Sem / Eltx, Power Eltx**

#### **Subject:- Network Filters and Transmission Lines**

Time : 3Hrs.                            M.M. : 100

#### **SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory  $(10 \times 1 = 10)$

- Q.1 Network is a combination of
- a) Electric Elements
  - b) Electronic Elements
  - c) Electric/Electronic Elements
  - d) None of the above
- Q.2 Attenuator consists of
- |               |                      |
|---------------|----------------------|
| a) resistors  | b) inductors         |
| c) capacitors | d) none of the above |
- Q.3 Attenuator is a \_\_\_\_\_ terminal network inserted between source and load.
- |      |      |
|------|------|
| a) 1 | b) 2 |
| c) 3 | d) 4 |
- Q.4 What is full form of LPF
- a) Linear pass filter
  - b) Low pass filter
  - c) Length pass filter
  - d) none of the above
- Q.5 An ideal filter have \_\_\_\_\_ attenuation in the pass band.

- a) zero                    b) one  
 c) infinity                d) Any of the above
- Q.6 Transmission line insulators are made of  
 a) Porcelain              b) Glass  
 c) Composite Polymer    d) Any of the above
- Q.7 Filters are \_\_\_\_\_ selective network  
 a) Impedance             b) Frequency  
 c) Impedance matching    d) None of the above
- Q.8 In symmetrical PI network what is the values of shunt arm impedance  
 a)  $Z_1$                     b)  $2Z_1$   
 c)  $Z_2$                     d)  $2Z_2$
- Q.9 To maintain same cut-off frequency, both the sections of a network must have characteristic impedance \_\_\_\_\_  $Z_0$   
 a) same as                b) different from  
 c) greater than            d) lesser than
- Q.10 Open-wire transmission line have  
 a) two parallel conductor  
 b) coaxial wire separated by dielectric medium  
 c) optical fiber  
 d) all of the above

### SECTION-B

**Note:** Objective type questions. All questions are compulsory.  $(10 \times 1 = 10)$

- Q.11 A two port network has \_\_\_\_\_ terminals. (two /four)

- Q.12 In a asymmetrical T-network, series arm in both sides have same impedance. (True/False)
- Q.13 Define attenuators.
- Q.14 Decibel is a unit of \_\_\_\_\_ (capacitance/attenuation)
- Q.15 Inductor is a \_\_\_\_\_ element. (active / passive)
- Q.16 Name primary constant of transmission line.
- Q.17 Expand VSWR.
- Q.18 Write full form of HPF.
- Q.19 R,L,C and G are known as secondary constant of transmission line. (True/False)
- Q.20  $Z_{oc} * Z_{sc} = _____$

### SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions.  $(12 \times 5 = 60)$
- Q.21 Explain two port network with block diagram.
- Q.22 What is a Symmetrical  $\Pi$  (PI) network?
- Q.23 Explain the terms-  
 a) Propagation constant  
 b) Attenuation constant
- Q.24 Drive an expression for characteristic impedance of  $\Pi$  (PI) network?
- Q.25 Explain difference between L-network and Bridge T-network.
- Q.26 Explain general characteristics of attenuator.
- Q.27 Draw and name different types of asymmetrical attenuator.
- Q.28 What is need of m-derived filter?
- Q.29 Write a note on Butterworth Filter in Detail.