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3rd Sem / Eltx
Subject:- Network Filters and Transmission Lines

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 How many terminals a two port network has
a) 1 b) 2
c) 3 d) 4

Q.2 A two port is reciprocal or bilateral provided
a) Z11 = Z22 b) Z11 = Z12
c) Z12 = Z21 d) Z21 = Z22

Q.3 Characteristic impedance for asymmetrical network at both the ports is
a) Same b) Different
c) Defined d) Not defined

Q.4 in symmetrical T network what is the values of series arm impedance
a) Z1 b) Z1/2
c) Z2 d) Z2/2

Q.5 For a prototype LPF, the phase constant β in the attenuation band is given by_____
a) p b) 0
c) ¥ d) p/2

Q.6 A band pass filter may be obtained using a high pass filter followed by
a) Low Pass Filter b) High Pass Filter
c) Band Pass Filter d) Band Reject Filter

Q.7 For a Prototype LPF, series arm component is
a) Capacitance b) Inductance
c) Resistance d) None of the above

Q.8 Input impedance of short circuited loss line with length l /4 is
a) Infinity
b) Zero
c) Characteristic impedance
d) None of the above

Q.9 An active network has
a) an emf source b) a current source
c) Both d) None of the above

Q.10 If K=0, Then VSWR will be_____
a) 0 b) 1
c) 2 d) All of the above

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 A two port network has_____ terminal.(Two/four)

Q.12 In an a symmetrical 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 an_____ element. (active/passive)

Q.16 Name primary constant of transmission line.

Q.17 Expand VSWR.

Q.18 Write full form of LPF.

Q.19 R,L,C and G are known as secondary constant of transmission line. (True/False)

Q.20 Zoc * Zsc=_____

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Drive an expression for characteristic impedance of 'T' network.

Q.22 What is asymmetrical network? Explain iterative impedance of an asymmetrical network.

Q.23 Differentiate between Linear and non-linear network.

Q.24 Explain concept and significance of Iterative Impedance.

Q.25 Design a symmetrical 'T' attenuator?

Q.26 What are the uses of attenuator?

Q.27 Draw and Drive the design equation of L-type attenuator.

Q.28 Draw and Explain the characteristics (Phase shift v/s frequency) of T filter.

Q.29 Explain concept of band pass filter

Q.30 What is difference between active and passive filter? Explain in detail.

Q.31 What is a Stub? Explain the principal of impedance matching using stub.

Q.32 A lossless line is terminated in pure resistance of 600W if characteristic impedance is 400W. Find value of SWR.

Q.33 Explain the concept of transmission line at high frequency.

Q.34 Write a short note on crystal filter.

Q.35 List different type of Transmission line.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=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?