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181035

Roll No.

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 Network is a combination of

- a) Electric elements
- b) Electronic elements
- c) Electric / Electronic Elements
- d) None of the above

Q.2 A two port is reciprocal or bilateral provided

- a) $Z_{11}=Z_{22}$
- b) $Z_{11}=Z_{12}$
- c) $Z_{12}=Z_{21}$
- d) $Z_{21}=Z_{22}$

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) All of the above

Q.6 A band stop filter

- a) Passes all frequencies above a particular frequency
- b) Passes all frequencies below a particular frequency
- c) Passes all frequencies between two specified frequencies
- d) None 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 separated by dielectric medium
- b) coaxial wire
- c) optical fiber
- d) All of the above

(1)

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(2)

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SECTION-B

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

- Q.11 A L-network is _____ network.
(symmetrical/asymmetrical)
- Q.12 A network having _____ pairs of terminals is called two port network. (two/four)
- Q.13 Define attenuator.
- Q.14 An ideal filter should have _____ attenuation in stop band.
- Q.15 An attenuator amplifies the signal. (True/False)
- Q.16 Write full form of BPF.
- Q.17 Define cutoff frequency of LPF?
- Q.18 Write full form of HVDC.
- Q.19 An equivalent circuit of Transmission line has capacitance in _____ arm. (series/shunt)
- Q.20 Write full form of VSWR.

SECTION-C

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

- Q.21 Explain two port network with block diagram.
- Q.22 Explain briefly insertion loss.
- Q.23 What is a symmetrical π (PI) network?
- Q.24 What is an image impedance?
- 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.
- 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 Explain briefly the primary constant of a transmission line.
- Q.34 What is a stub? Why it is used?
- Q.35 What do you understand by π (PI) type of transmission line?

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Describe and explain different types of networks in detail with the help of diagrams.
- Q.37 Explain how filters are classified on the basis of frequency characteristic. Also mention the applications of filters.
- Q.38 Write a short note on any two-
- Ladder attenuator
 - Active filter
 - Application of Transmission Line