S.B. Roll No.....

NETWORK FILTER AND TRANSMISSION LINES

4TH Exam /ECE/ETV/EMP/ECE II/6107/2261/Nov'16

Duration: 3hrs. **M.Marks: 75**

SECTION: A

Q.1 Do as directed: **1.5x10=15**

a) Propagation constant term is used in _____.
b) A two port network may have _____ and _____ elements.
c) Attenuators are used to _____ the voltage, current or power.
d) Variable attenuators have constant _____ and _____ impedances.
e) A line works as _____ filter.
f) The characteristics impendence of distortion less line is _____.
g) In a transmission line, VSWR is a _____ quantity.
h) Butterworth filter has _____ response.
i) For high pas filters, pass band extends upto _____.
j) _____ attenuator is used as volume control in communication receiver.

SECTION: B

Q.2 Attempt any five questions: **5x6=30**

a) Explain different losses in a transmission line.
b) Derive the relationship between decibel and Neper.
c) Discuss in brief butter worth filter.
d) Define the terms
   (i) Propagation constant (ii) Attenuation constant (iii) Phase shift constant
e) Write short note on insertion loss.
f) What is phase constant of two port network?
g) Derive an expression for open and short circuit impedance of half section.
h) How is a line represented by a T-circuit? Derive an expression for its characteristic impedance.

SECTION: C

Q.3 Attempt any three questions: **3x10=30**

a) (i) Differentiate between one port network and two port network.
   (ii)What are the properties of asymmetrical network?
b) (i) Discuss the operation of symmetrical bridge T-type attenuator.
   (ii) Discuss the concept of ladder attenuator.
c) Explain the concept of working of Low Pass and High pass filters and band pass filters.
d) Derive an expression for characteristics impedance using π type network circuit for transmission line.