Total No. of Printed Pages:02

SUBJECT CODE NO:- H-1277
FACULTY OF SCIENCE AND TECHNOLOGY
S.Y.B.Tech. (ETC) (Sem-III)
Principles of Communication Engineering
[OLD]

[Time: Three Hours] **[Max. Marks: 80]**

Please check whether you have got the right question paper.

N.B
i. Q. No. 1 and Q. No. 6 are compulsory
ii. Out of questions no's 2 to 5 and question no's 7 to 10 solve any two questions respectively.

Section A

Q.1 Attempt any five 10
a) Classify sources of Noise
b) What is Noise figure? Write its formula.
c) What is image frequency?
d) Draw frequency spectrum for DSBFC, DSBSC.
e) Define frequency modulation and write its formula of modulation index.
f) Write the advantages of modulation?

Q.2
a) Derive non-linear resistance characteristics of diode which generate basic Am signal 08
b) Define & explain 07
1) S/N ratio
2) Noise temperature
3) White Noise

Q.3
a) Define and explain following terms 08
1) Sensitivity 2) selectivity 3) fidelity 4) double spotting

b) Draw and explain block diagram of fm receiver 07

Q.4
a) Derive instantaneous voltage equation for FM wave. 08
b) Draw and explain separately excited mixer 07

Q.5
a) Draw and explain High level modulation in detail. 08
b) Draw circuit for pre-emphasis and de-emphasis and explain the same. 07

Section B

Q.6 Attempt any five 10
a) Write broadcasting frequencies and if used in FM?
b) What is capture effect?
c) What is skip distance?
d) What is MUF and write its formula?
e) List the types of microphones.

f) What are the requirementsof Hi-fi system?
g) What is use of enclose and baffles?

Q.7 a) Draw the circuit of ratio detector and explain the same. 08
b) Draw and explain construction & working of horn type loudspeaker. 07

Q.8 a) Compare horn, cone and electrodynamic loudspeakers. 08
b) Draw and explain the circuit of phase discriminator in detail. 07

Q.9 a) List different types of wave propagation and describe ground wave propagation? 08
b) Draw and explain ribbon microphone in detail. 07

Q.10 Write a short note (any three) 15
a) Crystal microphone
b) Marconi antenna
c) Duct propogation
d) Narrowband and wide band fm
e) Horn loudspeaker