Total number of printed pages:2 **D/3rd/DECE301**

2022

SUBJECT NAME : Principle of communication

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

Q.1 a) Draw the block diagram of communication system and explain function of each block in detail. 6+14=20

Q.2 Draw and Explain how a Balanced modulator circuit generates DSB signal. 8+12=20

Q.3 a) Draw and describe block diagram of filter method to generate SSB signal. 5+6=11

b) Explain amplitude modulation with drawing of modulation signal, carrier signal and amplitude modulated signal. 9

Q.4 a) Derive the total power relation of amplitude modulated waveform with carrier power and modulation index. 6

b) Draw the block diagram of phase shift method and describe SSB generation. 5

c) Draw and Describe Varactor diode modulator for FM generation. 9

Q.5 State sampling theorem and Describe different pulse modulation techniques in detail. 20

Q.6 a) State whether following statements are TRUE/FALSE 1X6=6

i) Bandwith requirement of FM is more than AM.

ii) SSB Transmission needs more power than DSB.

iii) Filter method is used to generate DSB sgnal.

iv) Inside a noisy environment FM works much better than AM.

v) Power of AM transmission depends on depth of modulation.

vi)Banwidth requirement of AM is 4fm.

b) 1X5=5

i) Vm=1V Vc = 2V calculate modulation index of AM.

ii)Carrier signal is a ……. frequency signal .

iii)For amplitude modulation amplitude of …….. signal is varied in accordance with modulating sinal.

iv) Sin200πt calculate frequency of this signal.

v)Microphone converts voice information into …… signal.

c) Describe AM generation method in detail. 9