

328611(28)

B. E. (Sixth Semester) Examination 2020

(Old Scheme)

(Branch : Et & T)

COMMUNICATION HARDWARE DESIGN

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Part (a) is compulsory from each unit. Part (a) contains 2 marks. Part (b), (c) and (d) contains 7 marks each. Attempt any two parts out of (b), (c) and (d).

Unit - I

1. (a) Why class C amplifier is used for AM Generation? 2
- (b) Explain Grid-bias modulation? Give its advantages and disadvantages? 7

- (c) Describe AM Modulation? Explain linear series plate modulation? 7
- (d) In a series plate modulated amplifier, plate supply voltage is 300 V and the DC plate current under unmodulated condition is 204. The sinusoidal modulating voltage which appears in the plate circuit of modulated amplifier has amplitude of 150 V. The unmodulated o/p carrier power is 4.5 kW. Calculate : 7
- (i) Modulation Index
- (ii) Carrier power under modulated condition.

Unit - II

2. (a) What do you understand by frequency Scintillation? 2
- (b) Draw the block diagrams of amplitude modulation radio transmitter using modulation at high carrier power level. 7
- (c) With the help of block diagram, explain working of VODAS? 7
- (d) Explain with the help of block diagram phase shift method of side band suppression? 7

Unit - III

3. (a) What are the basic function of AM Receivers? 2
- (b) Give the characteristic of ideal receiving antenna.
What is meant by tracking error? 7
- (c) With the help of circuit diagram. Explain MUSA
system of reception of short wave signal? 7
- (d) Explain with block diagram space diversity
reception? 7

Unit - IV

4. (a) Describe the need of Limiter? 2
- (b) Explain single tuned discrimination circuit? 7
- (c) Draw block diagram of Armstrong transmitter and
briefly explain? 7
- (d) A carrier of 90 MHz with 5 V peak amplitude a
modulating signal of 5 V peak amplitude and
frequency of 5 kHz. The frequency deviation
constant is 1 kHz/V. Determine the bandwidth of
frequency modulated signal? 7

Unit - V

5. (a) What is Aspect ratio? 2
- (b) Explain in brief about the Horizontal Resolution. 7
- (c) Write short notes on sound and video modulation. 7
- (d) Draw the block diagram of TV transmitter and explain in brief. 7