

End Semester Examinations - 2015-16 Even Semester - May 2016

14EC2013 Communication Theory and Systems

Set B

Time : 3 hrs
Total Marks: 100

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1. 1. a) Comment briefly on the various advantages of wireless communication systems. (10)
b) Derive the expression for the total power transmitted in an AM system with necessary mathematical equations. (10)
- OR**
2. 2 a) Determine the percentage of power saving in the following systems with modulation index of 1:
a. DSBSC (5)
b. SSBSC (5)
b) Bring out the various necessities for modulation in any communication system. (10)
3. 3 a) Explain the operation of ring modulator for generating DSBSC signals with necessary sketches. (15)
b) Differentiate DSBSC and SSBSC mode of modulation systems. (5)
- OR**
4. 4 a) How will you perform demodulation using synchronous approach for the following systems?
(a) DSBSC (5)
(b) SSBSC (5)
b) How will you extract the message signal from the AM signal using square law detector? (10)
5. 5 a) Compare and contrast AM and FM with respect to different performance measures. (10)
b) Describe the Armstrong method of FM generation with neat block diagram. (10)
- OR**
6. 6 a) Show the procedure of balanced slope detector for FM demodulation with neat sketches. (10)
b) Using phasor diagrams, demonstrate the demodulation methodology of ratio detector for FM signals. (10)
7. 7 a) Explain the operation of SSB transmitter with neat block diagram. (10)
b) Illustrate the operation of Tuned Radio Frequency (TRF) receiver with neat diagrams. (10)
- OR**
8. 8 a) Explain the various modules of FM receiver with neat block diagram. (10)
b) What is ISB system? With suitable communication blocks, demonstrate the operation of ISB transmitter. (10)
9. 9) Analyze the performance of noise in SSBSC receivers with necessary mathematical equations. (20)
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Wishing you All the Best
