

**SE203 - Analog and Digital Communication**

P. Pages : 1

Time : Three Hours



**GUG/S/23/13913**

Max. Marks : 80

- Notes :
1. All questions carry marks as indicated.
  2. Assume suitable data wherever necessary.
  3. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) Give advantages and disadvantages of analog communication. **8**  
b) Write a note on need for modulation. Also List types of modulation. **8**

**OR**

2. a) With neat diagrams explain amplitude modulation. Also derive an equation of Am wave. **8**  
b) Draw the block diagram and explain the function and working of DSB-SC system. **8**

3. a) Write short note on Narrowband FM. **8**  
b) State Carson's Rule for FM bandwidth. Also give equations and calculation for FM sideband levels. **8**

**OR**

4. a) Explain any two FM generation methods in detail. **8**  
b) Explain the relationship between FM & PM. **8**

5. a) With neat sketch explain TRF receiver block diagram. **8**  
b) Write a note on superheterodyne FM receiver. **8**

**OR**

6. a) Explain the following receiver terms **8**  
i) Sensitivity ii) Selectivity  
iii) Fidelity iv) Image freq. rejection  
b) Write a note on pre-emphasis & de-emphasis in FM. **8**

7. a) With proof explain sampling theorem. **8**  
b) Write a note on pulse amplitude modulation. **8**

**OR**

8. a) Explain differential PCM (DPCM) technique. **8**  
b) Write a note on Time Division multiplexing technique. **8**

9. a) Explain Gram-Schmidt orthogonalization procedure. **8**  
b) What is frequency shift keying (FSK)? Give FSK applications. **8**

**OR**

10. a) Write note on probability of error for BPSK. **8**  
b) Write a note on coherent detection of ASK. **8**

\*\*\*\*\*