

M.Tech. Electronics & Communication Engineering (CBCS Pattern) Sem-III  
**PECS32 A / PECS321 - Advanced Satellite Communications**

P. Pages : 1

Time : Three Hours



**GUG/W/22/11077**

Max. Marks : 70

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

1. a) Explain the Kepler's law of planetary motion and how they are applicable to the geostationary satellite. 7  
b) What is orbit ? Derive an expression for the equation of satellite orbit. 7
2. a) Explain the different types of transmission losses in satellite communication with necessary expression. Write the link power budget equation. 7  
b) Discuss the different types of noise and their significance in the design of a satellite link with necessary expression. 7
3. a) Explain the major test equipments required at an earth stations ? 7  
b) Explain Cassegrain antenna popular for large earth stations. 7
4. a) Explain coherent detection in satellite communication. 7  
b) Explain offset QPSK in brief. 7
5. a) Explain the following satellite applications. 7  
i) GPS ii) Satellite Navigational System.  
b) List out the MPEG compression standards. 7
6. a) Explain briefly the orbital parameters required to determine a satellite orbit. 7  
b) Explain the followings : 7  
i) I/P back-off  
ii) O/P back-off  
iii) earth station HPA.
7. a) What are the different types of antenna. Use in satellite communication. 7  
b) Write short notes on Geostationary satellite coverage. 7
8. a) Explain details about VSAT. 7  
b) List out the MPEG compression standards. 7

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