

ME EXTC | sem II | CBCS | FH 2019

17/05/2019

Q.P. Code :23793

[Time: 3 Hours]

[Marks:80]

Please check whether you have got the right question paper.

- N.B:
1. Question No.1 is compulsory, attempt any 3 questions out of remaining 5 questions
  2. Figures to right indicate full marks
  3. Assume suitable data wherever necessary and state it clearly

Q.1 Attempt any four of the following questions

- A. List the different satellite orbits with their characteristics and applications. 05
- B. Discuss the various ways of satellite stabilization in space. 05
- C. What do you mean by frame organization and window organization in satellite network? 05
- D. Explain the beam acquisition in laser satellite communication. 05
- E. Write a note on ISDN over satellite. 05
- F. Explain navigational application by using satellites. 05

Q.2 Attempt the following questions

- A. What are the various reasons for orbital perturbations? Discuss in detail. 10
- B. Derive the equation for link power budget equation. Also find an expression for the losses in case of an absorptive network. 10

Q.3 Attempt the following questions

- A. Discuss the satellite network reference models. 10
- B. Explain the difference between single hop and multi hop in satellite connections. 10

Q.4 Attempt the following questions

- A. Write a note on the satellite applications in space science. 10
- B. Draw and explain telemetry, tracking and command system in satellite communications. 10



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Q.5 Attempt the following questions

- A. Describe how a satellite is launched in geostationary orbit. 10
- B. Given that  $[C/I]_U = 26$  dB and  $[C/I]_D = 24$  dB, determine the overall Carrier-to-Interference ratio of the given link  $[C/I]_{UD}$ . 10

Q.6 Attempt the following questions

- A. Write a short note on optical satellite transmitter and receiver. 05
- B. Write a short note on SDH interfaces with satellite systems. 05
- C. Write a short note on Reliability and space qualification. 05
- D. Draw and explain the working of transparent and regenerative transponder configuration. 05

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