

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

Roll No

EC-501 (GS)**B.E. V Semester**

Examination, December 2017

Grading System (GS)**Voice and Data Communication***Time : Three Hours**Maximum Marks : 70*

- Note:** i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Describe local subscriber loop and explain the telephone circuit for it.
b) Explain:
 - i) Basic call procedure
 - ii) Channel noise
2. a) What is crosstalk? What is meant by near-end and far-end crosstalk? Explain.
b) What do you understand by SS7 (Signalling System Number 7)? Explain the call set up procedure using SS7 signalling. Also give its network functions.
3. a) With the help of a practical example, explain the telephone numbering plan of a public telephone network.
b) Write short notes on:
 - i) Trunk circuit
 - ii) Automatic exchanger

EC-501 (GS)

354

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[2]

4. a) Explain TDM in detail. Compare between bit interleaving and word interleaving.
b) Discuss about Codecs and Combo chips.
5. a) Explain the formation of master group.
b) What do you mean by topology? Compare all of them with their advantages and disadvantages.
6. a) Write in detail about:
 - i) DTE-DCE Interface
 - ii) Modems
- b) A TV picture is to be transmitted over a channel with 4.5MHz bandwidth and 35dB signal-to-noise ratio. Find the capacity of the channel (bps).
7. a) A receiver receives the code 11001100111. When it uses the Hamming encoding algorithm, the result is 0101. Which bit is in error? What is the correct code?
b) Compare circuit switching, packet switching and message switching.
8. Write short notes on (any three):
 - a) Types of error and error detection
 - b) Line configuration
 - c) T and T1 carrier systems
 - d) Voice frequency circuit arrangements
 - e) Telephone switching hierarchy

EC-501 (GS)

355
