

Fall, 1997
Tsai

Name: _____

**MIS 214 – Fundamental of Data Communication
Exam 1**

Part I: closed book(s) and note(s)

(7 points) I. List the seven requirements to design a telecommunication system.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

(6 points) II. Name and describe three major forms of modulating carrier's waves.

- 1.
- 2.
- 3.

(3 points) III. Name three different types of multiplexing method.

- 1.
- 2.
- 3.

(6 points) II. Using the key "PROTOCOL" TO encrypt the word "GRADUATE". Assume that space is 0, A is 1, B is 2, etc. (Using the same algorithm discussed in the class)

(14 points) IV. List the name and its major function(s) of every layer defined in the open systems interconnection.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

(6 points) V. Name and describe three data compression methods.

- 1.
- 2.
- 3.

(8 points) X. Name and describe every method to develop a telecommunication disaster recovery plan which will also prevent any system failure.

- 1.
- 2.
- 3.
- 4.
- 5.

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Part II: Open book(s) an Note(s)

(50 points) SAC Computer Inc. began manufacturing computers many years ago. The firm has grown and expanded over the years. Today, SAC ~~Inc.~~ is a leader in the field of computer industry. The company designs and builds specialized computer systems for a variety of customers such as banks, hospitals, wholesale and retail business, transportation industry, and manufacturing industry. The company has many divisions located throughout the country. SAC employs thousands of engineers, designers, assembly line workers, supporting personal (accounting, marketing, sales etc.) and managers who need a communication system(s) to make their work easier and more efficient. SAC Computer Inc. has hired you to design a modern and integrated voice and data telecommunication systems in terms of the following requirements:

1. Hardware;

2. Software;

3. Transmission mode(s);

4. Code(s);

5. Direction of data flow;

6. Multiplexing method(s);

7. Modulating methods(s);

8. Common carriers and their service(s); and

9. Diagram.