

KFUPM - COMPUTER ENGINEERING DEPARTMENT**COE-241 – Data and Computer Communication****Quiz 01 Model A****Student Name:****Student Number:**

Problem 1 (10 points): Draw a *general model* (block diagram) for a communication system and in one sentence define the function of each of these blocks. The names of the blocks must be identified.



Source: Generates signal or data to be communicated

Transmitter: Transforms and/or encodes information to be communicated

E.g. modulation - data encoding

Transmission System/Medium: Transmission line, space, interconnected switching nodes, etc

Receiver: accepts message and undoes transmitter procedures

E.g. demodulation - data decoding

Destination: receives raw signal or data

Problem 2 (15 points): In class we examined two switching technologies, namely circuit switching and packet switching.

- Define briefly circuit switching and give an example of a circuit-switching communication system.
- For circuit switching there are typically three steps that comprise the communication session. List these steps.
- Give an example of a network that uses circuit switching.

Solution:

(a) Circuit switched communication is a method where a dedicated physical path is created between the two end points. Intermediate (switching) nodes perform no processing. Example: Public switched telephone networks (PSTN).

b) Steps: (1) Call setup, (2) Info exchange, (3) Call termination.

c) PSTN