

## ITS323 – Quiz 2

Name: \_\_\_\_\_

ID: \_\_\_\_\_

Mark: \_\_\_\_\_ (out of 4)

### Question 1 [4 marks]

A terrestrial microwave communications system is created to deliver 1KB emergency warning messages from a transmission tower in town A to a receiver tower in town B. Because of the large distance between A and B, 5 *repeater* towers are needed between the two towns. Each tower uses the same equipment (for transmitter and receiver) with specifications as follows:

Transmit power: 10W

Antenna Gain: 25dBi

Receive sensitivity: -31dBm

Data rate: 10Mb/s

Frequency: 30MHz

The time to deliver a warning message from A to B is 5.4ms.

What is the distance between town A and B?