Part 2:

1.

4kHz is converted into 4000 hertz

S/N = 7

With the help of RF wireless World url: [Channel Capacity calculator | Shannon Hartley channel capacity (rfwireless-world.com)](rfwireless-world.com) It allows for me to calculate the result of channel Capacity.

Given 4kHz to be converted into MHz as 0.004 and S/N = 7

The channel Capacity is 0.012 Mbits/sec

2.

IF S/N is to be increased into 15 and b is decreased into 3kHz. Would it remain the same channel capacity? Yes, according to RF wireless World. It produced the same result of 0.012 Mbits/sec. With the increased signal to noise ratio power. It produced enough noise to compensate the decreased of bandwidth

3. No. Given S/N as 3612 it will cause a very obscure scale of regular telephone line. Producing high S/N region of power with bandwidth that will cause to much transmission.

Using the converter: it produces of outright 0.03488123352155218 Mbits/sec