WORKSHEET-5

1. $\lambda = \frac{c}{u} = \frac{3 \times 10^8}{3 \times 10^6}$

$\lambda = 100$ motor

2. Band with is 70K

3. 1.536 mbps

4. a) $\log_{10}\left(\frac{S}{N}\right) = 10$

$\log_{10}\left(\frac{1}{N}\right) = 5$

$S/N = 10^5$

$C = (10 \times 10^3) \log_2 (1 + 10^5)$

$= 10 + \log_2 (11.0^5)$

5. 20
10000
5000

$10000 \times 1000 / 60$

$\approx$ 8 mbps

6. $\frac{8000 \times 1000}{3 \times 10^{12}}$ ms

$= 2.6$ m/s.

7. 3rd byte

2 GbPS

$$\frac{3000 \times 8}{2 \times 10^9} = 0.012$$

8.

$$= 10 \times 10 \times 1 \times 1$$

$$= 100 \text{ Hz}$$

$$= 101 \text{ KHz}$$

9.

$$8 \text{ bytes} \times 8 = 64 \times 100$$

$$= 6400 \text{ kbps}$$

10. through $= 100 \times 0.0368$

$= 368$ x rams