

- Q. 2 (a) A vehicle moves with a velocity $v(t)$ as shown in Fig. 2. Determine the average crossing rate and fade duration over 100 seconds interval. Assume $\rho = 0.01$ and ignore large scale fading. **5 marks**
- (b) An application that requires a power outage probability of .01 for the threshold $P_o = -80$ dBm. For Rayleigh fading, determine the required average signal power? **2 marks**
- (c) A wireless system has data rate = 270 kbps and QPSK is used as a modulation scheme. Determine the maximum rms delay spread for which no equalizer is needed at the receiver. **3 marks**

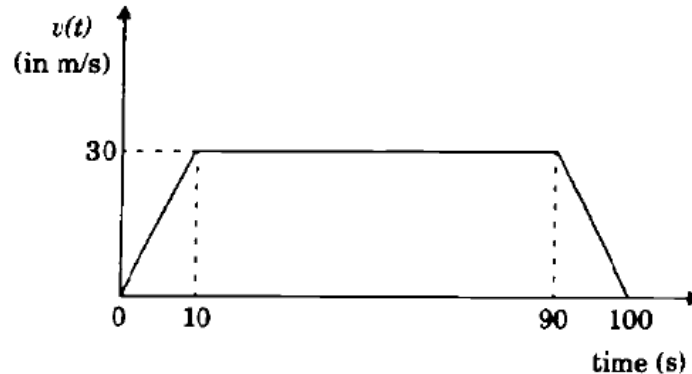


Fig. 2