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## COE 549 Quiz # 1

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An ad hoc of 2 Mbps WLAN using ALOHA protocol to connect three stations with a distance of 100 m from one another each, on average generating 10 packets/sec. If one of the terminals sent 100-bit packet, what is the probability of successful transmission of this packet? Assume that propagation velocity is  $3 \cdot 10^8$  m/s and the packets are produced according to the Poisson distribution. Assume that the receiver needs to receive the whole message before processing it.

Hint: The packets are produced according to the Poisson distribution is:  $P(X) = \frac{\lambda^x}{X!} e^{-\lambda T}$