

\* Indicates required question

## WN Questions

The efficiency of CSMA/CD is typically \_\_\_ that of slotted ALOHA \*

- much greater than
- much smaller than
- same as
- 100%, irrespective of

Which of the following is true about Selective Repeat ARQ \*

Last frames and the good frames are retransmitted

- 100%, irrespective of

Which of the following is true about Selective Repeat ARQ \*

- Both the erroneous or lost frames and the good frames are retransmitted
- Only the erroneous or lost frames are retransmitted, while the good frames are received and buffered
- 1 frame is transmitted and then it waits for the ACK to arrive before sending next frame
- Only the erroneous or lost frames are received and buffered while the good frames are retransmitted
- Both the erroneous or lost frames and the good frames are received and buffered

..... queuing theory, the first M indicates \_\_\_ and is represented by \_\_\_

In M/M/1 queuing theory, the first M indicates \_\_\_\_\_ and is represented by \_\_\_\_\_ distribution

- With memory, Uniform
- Memoryless, Poisson arrival
- Memoryless, Gaussian arrival
- With memory, Poission
- With memory, any arrival

- Memoryless, Gaussian arrival
- With memory, Poission
- With memory, any arrival

Poisson distribution is defined as \*

- Symmetric probability distribution wherein a finite number of values are equally likely to be observed
- Distribution of binary data from an infinite sample (population)
- straight line distribution 
- Probability of getting r events out of n trials.

In a multihop distributed wireless network, which of the following is TRUE [select two options] \*

In a multihop distributed wireless network, which of the following is TRUE [select two options] \*

- No. of hops between source and destination is always one
- There can be multiple possibilities for selecting the intermediate node
- Selecting Intermediate nodes (Relays) in a dense network is NOT possible
- Optimal path selection between source and destination node in a dense multihop network is an NP-hard problem
- A node lying at mid-point between source and destination node would always be selected as relay node

network is an NP-hard problem

- A node lying at mid-point between source and destination node would always be selected as relay node

In Protocol Interference Model for transmission, which one is TRUE? \*

- Transmission is allowed if the overall interference is less than a threshold value
- Transmission is allowed if the unwanted transmitter is outside an exclusion region of the intended receiver
- Transmission is allowed if the unwanted receiver is outside an exclusion region of the intended receiver
- Transmission is allowed for only one Transmitter-Receiver Paper at any time
- All multihop pairs of a link communicate at the same time

What is the efficiency of Pure ALOHA and slotted ALOHA? \*

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- 1/(2e), 1/e
- 1/e, e/2
- 1/e, 1/(2e)
- e, 1/e



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## Problem Solving

Write in Paper and submit the paper for derivation and calculation of this section

Find the minimum received power level for  $R = 54 \text{ Mbps}$  \*

Option 1

Find the minimum received power level for  $R = 6 \text{ Mbps}$  \*

Your answer

In a distributed adhoc multihop wireless network;

Given; Received power  $PR = PT/LP$ , where PT is Transmitted power and LP is path loss.

Noise No =  $KT$ , F is the noise figure of the receiver. Assume  $PR = Eb \cdot R$  where Eb is the bit energy and R is the data rate. Also, assume received power is the minimum signal sensitivity level,

Derive the expression for S in terms of  $Eb/No$ ,  $KT$ , F and R

Noise Figure	10 dB
$E_b/N_O @ BER 10^{-6}$ (practical)	14 dB
Data rate, $R$	6 Mbps
Ambient Temperature, $T$	293 K

Your answer