بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

AIN SHAMS UNIVRESITY
FACULTY OF ENGINEERING
ELECTRONICS AND COMMUNICATIONS
ENGINEERING DEPARTMENT

OPTIMIZATION OF THROUGHPUT AND DELAY FOR DIFFERENT TYPES OF CARRIER SENSE MULTIPLE ACCESS PROTOCOLS (CSMA)

A thesis submitted in partial fulfillment of the
Requirements for the degree of

Ph.D.

IN

ELECTRICAL ENGINERRING
[Electronics and Communications Engineering]

By

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STATEMENT

This dissertation is submitted to Ain Shams University for degree of Ph.D. in Electrical Engineering. The work included in this thesis was carried out by the author in the Department of Electronics and Communication Engineering, Ain Shams University.

No part of this thesis has been submitted for a degree or a qualification at any other university or institution.

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ABSTRACT

The object of this thesis is to make a comparative study between different CSMA/CD protocols used in LAN aiming to select an optimal one.

To verify the previous task, a detail survey of the standard types of CSMA/CD protocols, is conduced followed by suggesting a new adaptive protocol called Adaptive P-Persistent CSMA/CD. The proposed APP-CSMA/CD protocol was checked against the standard CSMA/CD protocols to check its effectiveness using advanced simulation technique suggested in this thesis called probabilistic algorithm.

Also presented in this thesis, comparative study between three types of backoff algorithms used for handling the retransmission procedure in the case of existence of collisions in the channel in order to select the optimal one. Then we recommended a mixed one and dynamic approach for these retransmission policies to be used in case of finding the channel in a collided mode.