

1	Rhif Myfyrwr		Rhestrwch rifau'r cwestiynau a ymgaiswyd gennych	At Ddiwedd y Swyddfa
2	Teitl y Papur Arholiad			
3	Cod y Modiwl			
4	Dyddiad ac Amser yr Arholiad			
5	Lleoliad yr Arholiad			
6	Rhif Sedd			
7	Nifer y Llyfrau Atebion a gyflwynwyd		Cyfanswm	



Llyfr Atebion Arholiadau

12 Tudalen

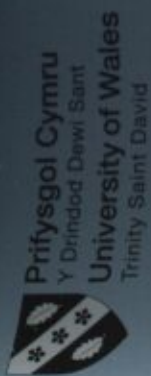
Cyfarwyddiadau i Ymgeiswyr

1. Rhwng yr holl wybodaeth y gofynnir amdani yn y blychau isod.
2. Rhwng eich enw yn y lle a ddarparwyd ar y dde, pligwch ef a'i selio i lawr (gan ddefnyddio'r label a ddarparwyd) i guddio'ch enw.
3. Rhaid i'r atebion fod mewn llawysgrifen ddarlennadwy. Gall yr Arholwyr naill ai anwybyddu sgrïpt annarlennadwy, neu drefnu iddi gael ei theipio a chael yr ymgeisydd i ddiu.
4. Ysgrifennwch eich atebion mewn inc.
5. Dechreuwch bob ateb ar dudalen newydd. Gwnewch unrhyw fras nodiadau yn y llyfr atebion a thymnu llinell drwyddynt.
6. Ni ddylid rhwngo unrhyw ran o'r llyfr hwn; rhaid ei gyflwyno yn gyfan.
7. Os defnyddir mwy nag un llyfr, rhwyngwch rhwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwyliwr/gwyliwyr.
8. Rhaid dychwelyd pob llyfr. Ni chaniateir mynd â llyfrau atebion, wedi eu defnyddio neu heb eu defnyddio, allan o'r lleoliad arholi o dan unrhyw amgylchiadau.

Llenwch, pligwch a seliwch
(gweler nodyn 2 isod)

CYFENW: Bowden

ENW(AU) CYNTAF: _____



Examination Answer Books

12 Pages

Instructions to Candidates

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Complete, fold and seal
(see note 2 below)

SURNAME: Bowden

FORENAME(S): Daniel John

1	Student Number	162 427	List the numbers of the questions you have attempted	Office Use
2	Title of Examination Paper	WANS PRACTICAL	8	
3	Module Code	CSAG002		
4	Date and Time of Examination	09/05/2018 11-32		
5	Examination Venue	Coler SIK GAR Room 542		
6	Seat Number			
7	Number of Answer Books handed in	1		

(Gweler yr ochr arall am y fersiwn Cymraeg)

8.) Reasons for using CHAP over PAP:

- CHAP offers MD5 encryption for passwords instead of sending them in plain text. ✓
- CHAP performs a 3-way handshake, prompting the user for username and password, instead of sending the username and password as a single LCP packet. ✓
- CHAP performs periodic challenges to ensure the nodes have valid password values. ✓

Llyfr Atebion Arholiadau

12 Tudalen

Cyfarwyddiadau i Ymgeiswyr

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- Rhowch eich enw yn y lle a dderparwyd ar y dde, plygwch ef a'i seilio i lawr (gan ddefnyddio'r label a dderparwyd) i guddio'ch enw.
- Rhaid i'r atebion fod mewn llawysgriflen ddarllenadwy. Gall yr Arholiwyd naill ai anwybyddu sgript annarllenadwy, neu drefnu iddi gael ei theipio a chael yr ymgeisydd i dalu.
- Ysgrifennwch eich atebion mewn inc.
- Dechreuwch bob ateb ar dudalen newydd. Gwnewch unrhyw fras nodiadau yn y llyfr atebion a thynnu llinell drwyddynt.
- Ni ddylid rhwngo unrhyw ran o'r llyfr hwn; rhaid ei gyflwyno yn gyfan.
- Os defnyddir mwy nag un llyfr, rhwymwch hwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwylwyr/gwylwyr.
- Rhaid dychwelyd pob llyfr. Ni chaniateir mynd â llyfrau atebion, wedi eu defnyddio neu heb eu defnyddio, allan o'r lleoliad arholi o dan unrhyw amgylchiadau.

Llenwch, plygwch a seliwch
(gweler nodyn 2 isod)

CYFENW:

ENW(AU) CYNTAF:

(See the other side for English version)

1	Rhif Myfyriwr	Rhestrwch rifau'r cwestiynau a ymgeisiwyd gennyh	At Ddiwedd y Swyddia
2	Teitl y Papur Arholiad		
3	Cod y Modwl		
4	Dyddiad ac Amser yr Arholiad		
5	Lleoliad yr Arholiad		
6	Rhif Sedd		
7	Nifer y Llyfrau Atebion a gyflwynwyd	Cyfanswm	

Examination Answer Books

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1	Student Number	023872	List the numbers of the questions you have attempted	Office Use
2	Title of Examination Paper	WAN		
3	Module Code	CSAC6002		
4	Date and Time of Examination	9/5/18 11.30		
5	Examination Venue	C11AG		
6	Seat Number			
7	Number of Answer Books handed in			Office Use

(Gweler yr ochr arall am y fersiwn Cymraeg)

Complete, fold and seal
(see note 2 below)

SURNAME:

RICHARD

FORENAME(S):

STEPHENS

pap is 2 way handshake
 chap is 3 way handshake

pap
 username R1
 password cisco123

(P1) (P3)
accept/reject

chap 3 way

challenge

pap
 (P1) (P3)
 username R1
 password R1
accept/reject

chap is more secure as pap shows
 the username in plain text where as
 chap encrypts the password with hash.
 chap challenges ~~the password~~
 always the connection of certain interface.

Complete, fold and seal
(see note 2 below)

SURNAME: WELLS

FORENAME(S): LEWIS
PETER

Examination Answer Books

12 Pages

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1	Student Number		List the numbers of the questions you have attempted	Office Use
2	Title of Examination Paper			
3	Module Code			
4	Date and Time of Examination			
5	Examination Venue			
6	Seat Number			
7	Number of Answer Books handed in			Office Use

(Gweler yr ochr arall am y fersiwn Cymraeg)

Llyfr Atebion Arholiadau

12 Tudalen

Cyfarwyddiadau i Ymgeiswyr

- Rhowch yr holl wybodaeth y gofynnir amdani yn y blychau isod.
- Rhowch eich enw yn y lle a ddarparwyd ar y dde, plygwch ef a'i selio i lawr i'gan ddefnyddio'r label a ddarparwyd i guddio'ch enw.
- Rhaid i'r atebion fod mewn llawysgriflen ddarlennadwy. Gall yr Arholiwr neill ai anwybyddu sgrïpt annarllennadwy, neu drefnu iddi gael ei theipio a chael yr ymgeisydd i dalu.
- Ysgrifennwch eich atebion mewn inc.
- Dechreuwch bob ateb ar dudalen newydd. Gwnewch unrhyw fras nodiadau yn y llyfr atebion a thynnu llinell drwyddynl.
- Ni ddylid rhwygo unrhyw ran o'r llyfr hwn; rhaid ei gyflwyno yn gyfan.
- Os defnyddir mwy nag un llyfr, rhwymwch hwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwyliwr/gwyliwyr.
- Rhaid dychwelyd pob llyfr. Ni chaniateir mynd â llyfrau atebion, wedi eu defnyddio neu heb eu defnyddio, allan o'r lleoliad arholi o dan unrhyw amgylchiadau.

1	Rhif Mlyfriwr		Rhestrwch rifau'r cwestiynau a ymgeisiwyd gennych	At Ddibenion y Swyddfa
2	Teitl y Papur Arholiad			
3	Cod y Modwl			
4	Dyddiad ac Amser yr Arholiad			
5	Lleoliad yr Arholiad			
6	Rhif Sedd			
7	Nifer y Llyfrau Atebion a gyflwynwyd			Cyfanswm

(See the other side for English version)

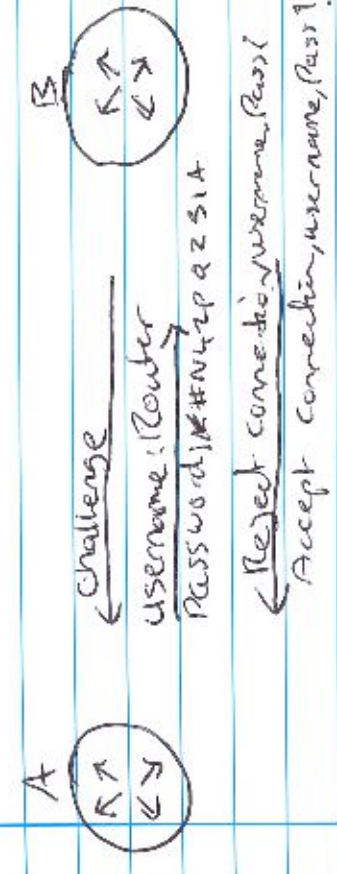
Llenwch, plygwch a seliwch
(gweler nodyn 2 isod)

CYFENW: _____

ENW(AU) CYNTAF: _____

it is preferable because ~~some devices~~
 and applications do not support chap using
 chap creates more network traffic and puts
 a higher dependency on the network, it requires
 less computing because it doesn't have to
 compute the hashed algorithm.

it is preferable to use Chap over PAp because
 it used a 3 way handshake to authenticate
 the connection.



Challenge Handshake authentication protocol.

it will challenge the connection and requests
 the ~~username~~ username and password, this
 will be checked against the username and
 password in the database. (chap uses the MD5
 hash algorithm which encrypts the password
 so it is not recognisable, this is computed (decrypted)
 and compared to the expected password in the DB.
 chap also adds extra security by including
 a dynamic challenge No, this dynamically changes
 and helps against relay attacks which pap
 doesn't have any protection against. chap
 periodically challenges the handshake to ensure
 the stability of the secure connection. Pal
 has no encryption and send the usernames and
 passwords in clear text across the network, chap
 is overall a better security mechanism than pap
 although it is not supported on as many applications
 as pap.

CYFENW:

ENW(AU) CYNTAF:

Llyfr Atebion Arholiadau

12 Tudalen

Cyfarwyddiadau i Ymgeiswyr

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- Rhowch eich enw yn y lle a ddarparwyd ar y dde, plygwch ef a'i selio i lawr (gan ddefnyddio'r label a ddarparwyd) i guddio'ch enw.
- Rhaid i'r atebion fod mewn llawysgrifen ddarlennadwy. Gall yr Atbolwyr naill ai anwybyddu sgrïpt annallennadwy, neu drefnu iddi gael ei threipio a chael yr ymgeisydd i dalu.
- Ysgrifennwch eich atebion mewn inc.
- Dechreuwch bob ateb ar dudalen newydd. Gwnewch unrhyw fras nodiadau yn y llyfr atebion a thynnu llinell drwyddynt.
- Ni ddylid rhwygo unrhyw ran o'r llyfr hwn; rhaid ei gyflwyno yn gyfan.
- Os defnyddir mwy nag un llyfr, rhwymwch hwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwyllwr/gwyllwyr.
- Rhaid dychwelyd pob llyfr. Ni chaniateir mynd â llyfrau atebion, wedi eu defnyddio neu heb eu defnyddio, allan o'r lleoliad arholi o dan unrhyw amgylchiadau.

1	Rhif Myfyriwr		Rhestrwch rifau'r cwestiynau a ymgeisiwyd gennych	At Ddiweddion y Swyddia
2	Teitl y Papur Arholiad			
3	Cod y Modwl			
4	Dyddiad ac Amser yr Arholiad			
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6	Rhif Sedd			
7	Nifer y Llyfrau Atebion a gyflwynwyd		Cyfanswm	

(See the other side for English version)

Examination Answer Books

12 Pages

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Complete, fold and seal
(see note 2 below)

SURNAME: DAVIDS

FORENAME(S): RICHARD

1	Student Number	067478	List the numbers of the questions you have attempted	Office Use
2	Title of Examination Paper	CSAC 6002 WAN BRAC		
3	Module Code	CSAC 6002		
4	Date and Time of Examination	11:30		
5	Examination Venue			
6	Seat Number			
7	Number of Answer Books handed in			

(Gweler yr ochr arall am y fersiwn Cymraeg)

Task 8: why CHAP over PAP?

Challenge handshake authentication protocol CHAP is preferable over Password authentication protocol PAP because, PAP sends user name and password over plain text over a connection, PAP is vulnerable to attacks. Such as relay attack. CHAP MD5 encryption is used for passwords over a connection and also protects against relay attack.

PAP uses two hand shake authentication while CHAP uses three way authentication.

PAP should not be used over a network

1	Rhif Myfyriwr		Rhestrwch rifau'r cwestiynau a ymgaiswyd gennych	At Ddibenion y Swyddfa
2	Teitl y Papur Arholiad			
3	Cod y Modwl			
4	Dyddiad ac Amser yr Arholiad			
5	Lleoliad yr Arholiad			
6	Rhif Sedd			
7	Nifer y Llyfrau Atebion a gyflwynwyd		Cyfanswm	

Llyfr Atebion Arholiadau

12 Tudalen

Cyfarwyddiadau i Ymgeiswyr

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3. Rhaid i'r atebion fod mewn llwysgriflen ddarlennadwy. Gall yr Arholiwr naili ai arwybwyddu sgrïpt annarlennadwy, neu dreftu iddi gael ei theipio a chael yr ymgeisydd i dalu.
4. Ysgrifennwch eich atebion mewn inc.
5. Dechreuwch bob ateb ar dudalen newydd. Gwnewch unrhyw fras nodiadau yn y llyfr atebion a thynnu llinell drwyddynt.
6. Ni ddylid rhwygo unrhyw ran o'r llyfr hwn; rhaid ei gyflwyno yn gyfan.
7. Os defnyddir mwy nag un llyfr, rhwymwch hwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwyllywr/gwyllywyr.
8. Rhaid dychwelyd pob llyfr. Ni chaniateir mynd â llyfrau atebion, wedi eu defnyddio neu heb eu defnyddio, allan o'r lleoliad arholi o dan unrhyw amgylchiadau.

Llenwch, plygwch a seiliwch
(gweler nodyn 2 isod)

CYFENW: _____

ENW(AU) CYNTAF: _____

Examination Answer Books

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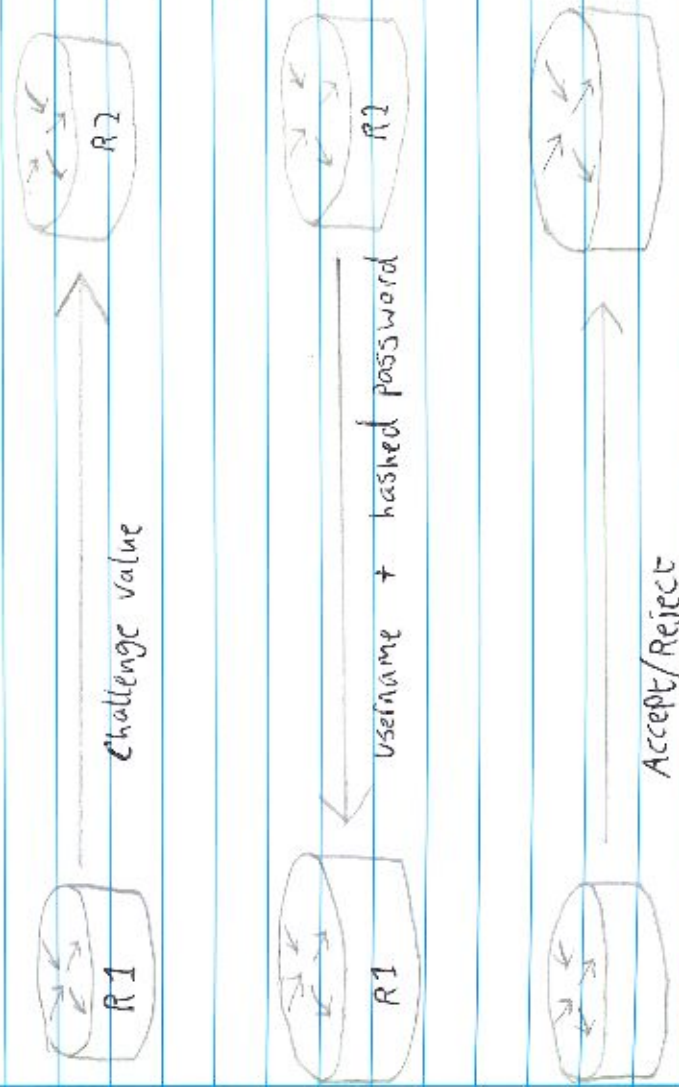
Complete, fold and seal
(see note 2 below)

SURNAME: BONNELL

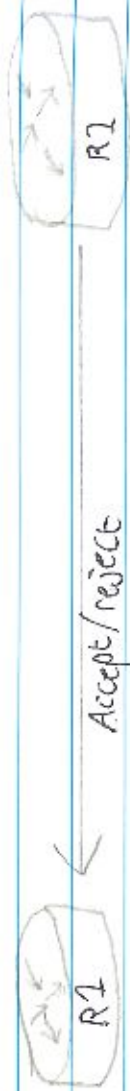
FORENAME(S): MICHAEL

1	Student Number	171381	List the numbers of the questions you have attempted	Office Use
2	Title of Examination Paper	WAS WANS Practical	8	
3	Module Code	M6X CSAC6002		
4	Date and Time of Examination	09/05/2018 11:30		
5	Examination Venue			
6	Seat Number			
7	Number of Answer Books handed in			Office Use

Challenge Handshake Authentication Protocol (CHAP) is preferable to Password Authentication Protocol (PAP) because PAP is less secure. PAP sends a username and ~~log~~ password as plain text from one point to the other when the ~~link~~ two points are connected together. If the username and password match a login in a router's database, the link becomes active and ~~the~~ network traffic begins to flow. If the password username and password are invalid, the link is rejected. CHAP involves one router sending a challenge to the other. The challenged router then sends a username and a hashed password ~~the~~ to the other. If the username and password match a login on the router, ~~the~~ an ACCEPT message is sent back and the connection opens. Otherwise a REJECT message is sent and the connection is refused. This process repeats every ten seconds to verify that a connected device is not being spoofed. In CHAP, passwords are hashed using the MD5 algorithm and the challenge value.



CHAP 3-way handshake



PAP 2-way handshake

Llyfr Atebion Arholiadau

12 Tudalen

Cyfarwyddiadau i Ymgeiswyr

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- Rhaid i'r atebion fod mewn llawysgrifen ddarlennadwy. Gall yr Arholiwy'r naill ai anwybyddu sgrïpt amarlennadwy, neu drefnu iddi gael ei theipio a chael yr ymgeisydd i dalu.
- Ysgrifennwch eich atebion mewn inc.
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- Ni ddylid rhwgo unrhyw ran o'r llyfr hwn; rhaid ei gyflwyno yn gyfan.
- Os defnyddir mwy nag un llyfr, rhwymwch hwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwyllwr/gwyllwyr.
- Rhaid dychwelyd pob llyfr. Ni chaniateir mynd â llyfrau atebion, wedi eu defnyddio neu heb eu defnyddio, allan o'r lleoliad arholi o dan unrhyw amgylchiadau.

Llenwch, plygwch a seliwch
(gweler nodyn 2 isod)

CYFENW: _____

ENW(AU) CYNTAF: _____

1	Rhif Myfyriwr		Rhestrwch rifau'r cwestiynau a ymgeisiwyd genych	At Ddbenion y Swyddfa
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3	Cod y Modwl			
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(See the other side for English version)

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Complete, fold and seal
(see note 2 below)

SURNAME: Jenkins

FORENAME(S): Kyle Robert

1	Student Number	179263	List the numbers of the questions you have attempted	Office Use
2	Title of Examination Paper	WANS Practical		
3	Module Code	CSAC 6002		
4	Date and Time of Examination	09/05/2018		
5	Examination Venue			
6	Seat Number			
7	Number of Answer Books handed in	1		

(Gweler yr ochr arall am y fersiwn Cymraeg)

Question No.

8a.

It is preferable to use CHAP (Challenge Handshake Authentication Protocol) firstly because it encrypts the password with the MD5 message digest hashing algorithm. The hashing is provided by the remote node (Branch 1 or Branch 3) and sent to the central router. Also, CHAP continuously challenges the password & credentials of ~~provides~~ the serial port that is sending the packet. CHAP stores an identifier that dynamically changes; this identifier is challenged therefore securing the serial connection.

Answer yn unig

Rhifyn Cwestiwn