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FORENAME(S): STEPHEN EDWARD

12 Pages

1. Please give the information requested in the boxes below.
2. Enter your name in the space provided to the right, fasten the book with the tag provided and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either read your answers in cursive script or have it typed and the expense of typing charged to the candidate.
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1	Student Number	P133367
2	Title of Examination Paper	ADVANCED ROUTING
3	Module Code	M6X01084
4	Date and Time of Examination	15th January 2018 12.00 PM
5	Examination Venue	TOWNHILL CAMPUS (GYM)
6	Seat Number	G052
7	Number of Answer Books handed in	1

List the numbers of the questions you have attempted	Office Use
1	6 1/2
3	3
2	8
Total	17 1/2 / 23 %

(Gweler yr ochr arall am y fersiwn Cymraeg)



Prifysgol Cymru
Y Drindod Dewi Sant
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Llyfr Atebion Arholiadau

12 Tudalen

Cyfarwyddiadau i Ymgeiswyr

1. Rhwch yr holl wybodaeth y gofynnir amdani yn y blychau isod.
2. Rhwch eich enw yn y lle a ddarparwyd ar y dde, pwygch e'r a'i seilio i lawr (gan ddefnyddio'r label a ddarparwyd) i guddio'ch enw.

1. Rhaid i'r atebion fod mewn llawysgriften ddarllenadwy. Gall yr Arholiwr naill ai anwybyddu sgrïpt annarllenadwy, neu drefnu iddi gael ei theipio a chael yr ymgeisydd i dalu.
2. Ysgrifennwch eich atebion mewn inc.
3. Dechreuwch bob ateb ar dudalen newydd. Gwnewch unrhyw fras nodiadau yn y llyfr atebion a thynnu llinell drwyddynt.
4. Ni ddylid rhwgo unrhyw ran o'r llyfr hwn; rhaid ei gyflwyno yn gyfan.
5. Os defnyddir mwy nag un llyfr, rhwymwch hwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwyllwr/gwylywr.
6. 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 amgylchriadau.

(See the other side for English version)

1	Rhif Myfyriwr	
2	Teitl y Papur Arholiad	
3	Cod y Modwl	
4	Dyddiad ac Amser yr Archoliad	
5	Lleoliad yr Arholiad	
6	Rhif Sedd	
7	Nifer y Llyfrau Atebion a gyflwynwyd	

[illegible]

Llenwch, plygwch a seliwch
(gweler nodyn 2 isod)

CYFENW:

ENW(AU) CYNTAF:

① a

i, Neighbor Table - This is the table that contains all routing information for adjacent neighbouring routers that are within the network whilst using EIGRP.

ii, Topology Table - This is the table used to hold all of EIGRP IP addressing + other important network related data which is very important due to it containing all of this

iii, Routing table - This is used to contain all routing information that is used within a network such as routing protocols ~~IP header~~ within a EIGRP Network.

iv, Advertised distance - This is the advertised distance between each router + next hop address.

v, Feasible distance - This is the distance that is used as a backup and is normally used ~~to use~~ by means of Metrics as in if a route has ~~higher metric~~ it will not be used as it needs the lowest Metrics possible.

① B Different packets used by EIGRP are -:

- Hello packets
- Next-hop IP Address
- Distance
- Router ID
-

① C

Based on the output listed in the diagram the reason for the link breakdown is the line containing the MD5 Authentication as shown on R1 it is Key ID = 1 and on R2 it is Key ID = 2. This may have been an error on either Router whilst being configured. To rectify this the MD5 Authentication on either Router would need to be changed to match each other. This should rectify the problem.

①d) The issue caused by the update about 10.0.0.0/8 is that it is on the 192.168.1.46/30 network so it would need to be routed correctly this would be achieved by setting up a static route.

③Aa) Router ID's are used to identify each router within a network using OSPF, and it's used for configuration purposes for example when using network statements.

③b) The 3 criteria of using the Router ID -:

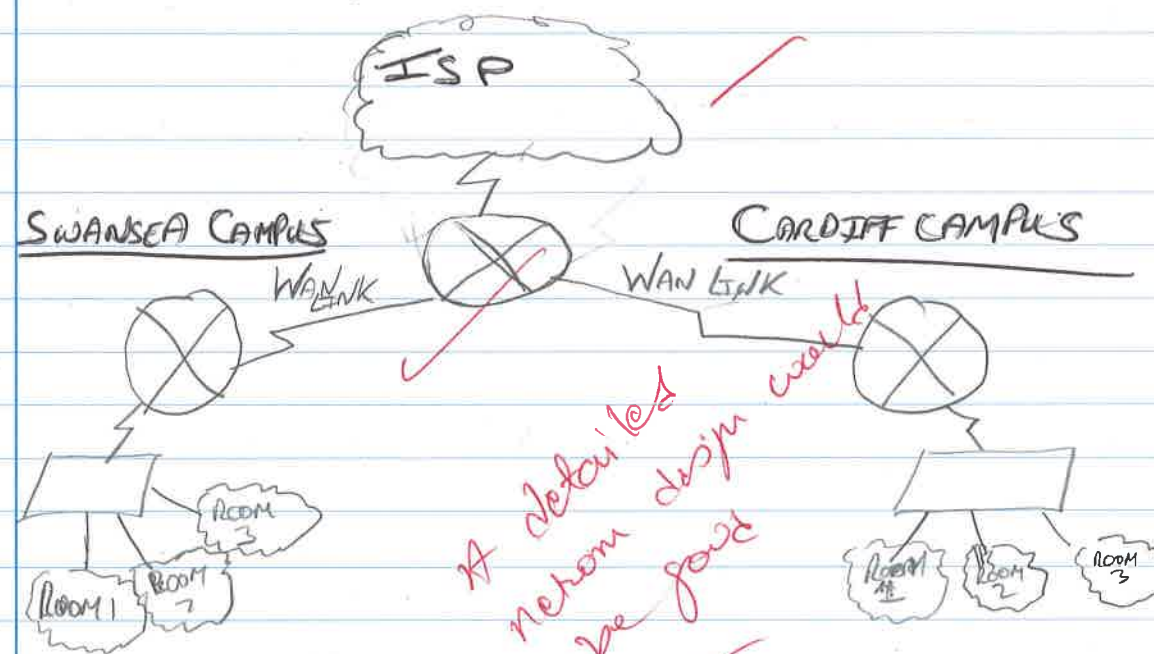
- 1, Routing Protocol
- 2, all routers on same network
- 3, Correct setup used on all routers - eg separate identifiable labels such as R1-1.1.1.1 R2-2.2.2.2 R3-3.3.3.

③B ⑥) Distance Vector routing protocols are used when there is a distance based protocol and can be used with multiple protocols. Link state routing protocols are used by means only one routing protocol, which has multiple connections to it and also several networks.

③C ⑥) The role of A DR (Designated Router) is that, that it is the designated router for traffic for the network to use to direct all network related traffic through.

The role of A BDR (Backup Designated Router) is that if the DR goes down rather than the whole network failing the BDR picks this up and would act as the Designated router.

②a) With regards to the information given from the setup and also the requirements. I believe that the best way to create/rebuild the network would be to use ^{as above example} the following network diagram then from there list all the required setup information. ∴



As seen above it uses a hierarchical network consisting of a Core, distribution + access layers, routing protocols used that could be used would be EIGRP/OSPF as these are the most commonly used and offer the best routing protocols options, IPv6 would need to use OSPFv6 as this would be able to offer full IPv6 usability. with regards the Data + VoIP VLANs these would sit within each room (as an example) this would offer full access to Data + VoIP connections within the network, also WAN links would need to be setup for full network connectivity and offer connectivity between campuses. with regards IP addressing I feel that ~~either~~ a 10.0.0.0/8 or 192.168.0.0/24 network ~~or~~ would be best to use as it would offer the required scalability and also required Staff No's. DHCP could also be used in addition as this would allow for BYOD to come into play.

why?

very brief no analysis or critical evaluation of your choice.

(Bring your own device.)

Question No.

Examiner Only

Question No.

Examiner Only

Arholwr yn unig

Arholwr yn unig Rhif y Cwestiwn

Rhif y Cwestiwn

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Arholwr yn unig

Rhif y Cwestiwn