Sample mid-session answers and marks

This file gives some examples of answers that students have given to sample exam questions and shows the marks that they received and (for some answers) comments about the limitations of the answer. They are provided to help students understand what is expected in answers to descriptive questions that may be used in this course. There are more ways to answer a question incorrectly than there are to answer it correctly, so the answers here are poorer on average than the averages over all students who did the exam (2.6/3 for Q3, 1.6/3 for Q7 and 0.7/2 for Q18, with an overall average of 49/70 for the exam). The answers appear in order of decreasing marks. Marks are generally integers, and so are a coarse measure of the quality of each answer. Where I couldn’t quickly decide on an integer mark, I may give a half mark, or write “g” for generous and possibly err on the side of being a little harder in marking a subsequent question from that student.

Q3 [3] What is the difference between an element, an object and an agent, in the context of network management?

(This question was worth 3 marks for this test, but 6 marks in the sample test. Such changes to the scale of marking are rare, i.e. the sample exam is generally a decent representation of the number of questions and number of marks for each question.)

Answer (don't expect students to answer as concisely as this, but this lists the required information): Elements: Hardware/software “things” in the network that can be managed independently of each other. Object: A representation of an aspect of an element. Agent: Software on an element that allows a network manager to manage it.

3. D element: anything that can be managed separately from other things.
   3. object: A representation of an aspect of an element.
   3. agent: Software on element that enable management.

3. element refers to anything that can be managed
   object refers to a representative of an aspect of an
   agent refers to the software in the element be

3. A element is anything that can be managed different from other
   An object is a representation of an aspect of an element
   An agent is the software that can be run in the element to
   regular the element acceptable English (just!?)
The purpose of this course is not to evaluate or develop written English skills, so students do not get penalised for grammatical mistakes provided the intent can be determined from the text.

Definitions of object and agent are both borderline.
3. element is anything support over network management
   object is a representation of element
   agent is software over an element.
Answer: TDR sends a pulse signal down a cable, and if the cable is broken the signal will be reflected. The delay to receive the reflection and the known propagation speed in the cable allows TDR to determine the approximate location of the cable break.
7. TDR transmits a pulse and observes the reflection delay of reflector to check the position of break in line. 

7. When using TDR for debugging, transmit a pulse and observe delay to reflection.

7. The signal will be reflected when the channel state changes, for example, disconnection or poor quality in wireless channel. (in wireless channel)

7. The sender sends pulse signals periodically and measures the reflected delay.

8. Based on the reflected delay of reflected signal, the position of disconnection will be measured.

7. The signal can be reflected at the discontinuous part of media. Therefore, signals can be sent and then, the broken location can be confirmed according to reflected signal.

7. TDR: discontinuous send pulse and get response to test the terminals, can be used to detect the break of wires and test whether the terminals ends are powered.

7. Time Domain Reflectometry (TDR).

TDR is a technique used to detect flaws in the physical transmission medium, whether it is splitting, short, disconnected etc. 

7. Time Domain Reflectometry can detect the difference from the reflection index from one part, so it can be used to detect error.
7. Time Domain Reflectometry can detect the location of break

how?

7. Discontinuities in channel can reflect signal
   Electrical: Impedance mismatch.
   Optical: Change of refractive index.

7. It transmits a pulse and measures the delay to observe the location of the break.

   Machine sends many types of probes to the cable, with different TTL.
   If the cable was broken, the probe would back to the machine.

7. If there are some nodes between Source and Destination, TDR can send a message from source to destination and each node will give a feedback. By analysing the information of feedback, such as delays, we could know which node breaks.

Solution:
Send
7. Module: Many types of probes to the code with TTLs
   If the cable was broken, the probe would break.
   No traceroute / ping

7. need
Q18 [2] What advantage do SNMP Traps provide over a manager polling the agent to determine whether the value of an object has changed?

Answer: Lower delay in manager learning of the event since traps are sent immediately after the event, rather than waiting until the manager next polls the agent. Less data sent because only sent when events occur, rather than manager polling and only finding out that nothing has occurred.
18. number of messages exchanged
timeliness; time between event and next GET

18. number of messages exchanged \( \rightarrow \) polling using GET

* timeliness of a interval between events and GET
\( \rightarrow \) interval between events using TRAP.

Alludes to lecture; not self-contained. Answers need to make sense by themselves, without merely being references to lectures/course materials.

18. SNMP Traps can:
1. support larger number of exchanges.
2. improve timeliness, the time after a GET and before response is short.

18. SNMP traps provide a better timeliness. why?

1. SNMP traps help agent to notice the manager ## of
   the changes passively.

18. Ue Traps may exchange information

   and shorter the time because Traps as
   "polling" and don't need to get request repeatedly
   from object when there is no change

18. Traps is better because the number of messages exchanged. For get, no message exchanged.

   The second reason is timeliness. Time is between event and next
   GET.
“mistake” here might refer to an event (in particular a fault) on the device, but could equally refer to a problem in transferring the message (e.g. corruption due to noise) or some other mistake. The student might have had the right intention here, but couldn’t express it due to language issues, but because the intention cannot be determined (and because it doesn’t explain part 2 well) it got penalised. The next answer uses similar language, but wasn’t as lucky. While they appear side-by-side here, when marked they were probably separated by a couple of hours of monotonous marking of other exam papers.
18. SNMP Trap: The receiver doesn’t need to send a Response in order to confirm whether the value of an object has changed.

- SNMP Trap is usually used to check the value of an object after every request where an "If" check value periodically.
- SNMP can be used for special objects which detect changing values of objects.

18. Access Mode:
SNMP restricts access.

18. Message exchange

18. Solution: