Examination report – June 2014 series

2730-022 Advanced Telecommunication Systems

Section 1 – Areas of good performance
Syllabus reference: 1.1 / 1.13 / 1.20 – Identify accurately classless and classful IP addresses and Classless Inter-Domain Routing (CIDR) blocks. Explain classless addressing (supernetting) and how it has eased the Running Out of Address Space (ROADS) problem on the Internet. Explain Network Address Translation (NAT) technique and how it is applied to serve a network. These sections were answered reasonably well by most candidates, indicating a reasonable understanding in this area. Syllabus reference: 3.3 – Identify the materials used in the manufacture of the core and cladding for fibre optic transmission lines. This section was answered well by most candidates. Syllabus reference: 3.7 – Explain the relevance of Snell's law to fibre optic communication systems and use it to find the 'critical angle' for total internal reflection. Most candidates gave accurate calculations in this section. Syllabus reference: 4.9 / 4.12 – Explain the function of the Cell Loss Priority (CLP) bit in the ATM frame header. Describe the four classes of service carried by ATM. These parts were answered reasonably well, though a lack of detail in the description of the four classes of service carried with reference to the ATM sometimes cost marks. Syllabus reference: 5.8 – Define and provide examples of routing metrics. This section was answered reasonably well. Syllabus reference: 5.29 – Discuss how the problems of loops are addressed. Most candidates answered this section well, showing a reasonable understanding in this area. Syllabus reference: 6.6 – Describe the advanced services that INs can offer. This section was answered very well. Syllabus reference: 7.13 – Explain the purpose of intelligent traffic management and load-balancing technologies. This section was answered reasonably well, although there was a lack of detail. Syllabus reference: 7.10 – Explain the benefits of caching servers or caching appliances, deployed in key locations. This section was answered reasonably well. Syllabus reference: 8.5 / 8.6 – Explain the interactions between the NMS and managed devices can be any one of four different types of commands. Describe parameters that can be monitored. Answered well, but again briefness in the descriptions cost marks especially with the explanations for each of the commands trap and traversal.

Section 2 – Areas for development
Syllabus reference: 2.2 – Distinguish between various types of standards. This section gave quite a few candidates problems as they confused different standards together. Syllabus reference: 3.5 – Evaluate the terms associated with optical fibres. Very few candidates gave accurate answers as most confused the four features with each other. There was not a clear distinction in terms of each. Syllabus reference: 3.33 – Investigate, and explain the function of, the range of test equipment used on fibre optic links. Very vague and mostly incorrect answers given in this section showing a lack of understanding in this area. Syllabus reference: 5.4 / 5.5 – State that there are link-state algorithms (also known as shortest path first algorithms) and distance vector algorithms and list the differences between them. Explain that link-state algorithms send small broadcast updates, while distance vector algorithms send larger updates only to neighbouring routers. All parts were answered poorly showing a lack of knowledge with respect to distant vector and link state methods. Syllabus reference: 5.26 / 5.40 - Explain how switches achieve flow control. Define the term, non-blocking switch fabric. Both sections were answered poorly showing a lack of knowledge with respect to switch flow control. Syllabus reference: 6.10 – Describe the function of different types of signalling endpoints. Very few candidates attempted this part, those that did gave mostly incorrect answers.
Section3 - Recommendations
Read questions carefully re- descriptions, explanations etc. Produce neat legible diagrams if asked for.