Examination report – June 2013 series

2730-023 Advanced radio systems

Section 1 – Areas of good performance
Syllabus reference: 1.5 This syllabus section was generally well answered by candidates. Syllabus reference: 1.11 This syllabus section was also generally well answered by candidates. Syllabus reference: 1.38 The calculation for the overall noise figure saw many candidates inserting the dB values directly into the formula. Candidates were awarded no marks for this part. Syllabus reference: 1.63 This syllabus section was also generally well answered by candidates.
Section 2 – Areas for development
Syllabus reference: 1.42 Many candidates clearly had the general idea of a diplexer but no candidate wrote of the ensuing disaster if transmitter power was coupled to the receiver input. Some, but not all, realised that implementation was by filters. Many candidates lost marks through lack of detail in their answers. Syllabus reference: 1.27 Not all candidates were clear as to what harmonics are---some candidates confused them with noise. Non-linearity is the essential cause of harmonic generation. Syllabus reference: 1.45 For most candidates, the descriptions for the vision of the ITU for IMT-2000 were not detailed enough. Syllabus reference: 1.65 This syllabus section was the least well performed. There were few correct diagrams and the accompanying descriptions were too brief. Syllabus reference: 1.76 Candidates had difficulty drawing detailed diagrams for the R99 Phase 4 system and the R99 Phase 5 system with reference to UMTS network architectures in the Core Network (CN). Many candidates missed the essential differences between these diagrams. Syllabus reference: 1.100 The two main launch systems of expendable rockets and the space shuttle were well described by most candidates. Syllabus reference: 1.101 The two advantages of using VSATs over terrestrial land lines for national communication could have done with a lot more detail.