**Examination report – June 2010 series**

Paper no 2730 – 011 Fundamentals of electronic communication 2

| Section 1 – Areas of good performance (question no/syllabus topic or reference) |
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| Syllabus section: 1.14, 1.15, Statistics-Many good answers.<br><br>Syllabus section: 1.17, Histograms-were generally tidy and well presented.<br><br>Syllabus section: 1.9, 1.10, Number Systems-Large amount of correct answers for this question.<br><br>Syllabus section: 2.18, 2.22, Logic-Most centres answered these well.<br><br>Syllabus section; 2.27, 2.28, 2.10, 2.11, 2.22, 2.21 3 Logic-Well answered in most cases<br><br>Syllabus section; 3.20, Transmission systems-Some good answers<br><br>Syllabus section; 4.11, 4.12, 4.10, Noise-Generally well answered.<br><br>Syllabus section: 4.9, 5.4, 5.8, 5.11, Logarithms-Most centres answered these parts well.<br><br>Syllabus section: 5.24, 5.23, Decibels-These sections were well answered.<br><br>Syllabus section: 6.20, Transmission Lines-Generally well answered, explanations brief in some cases.<br><br>Syllabus section: 6.17, Transmission Lines-Many good answers to this section.<br><br>Syllabus section: 7.6, Parallel Resonance-Generally well answered<br><br>Syllabus section: 7.3, Filters-Very good answers<br><br>Syllabus section: 7.7, 8.8, 8.12, These sections were reasonably well answered.<br><br>Syllabus section:8.2, 8.14, Modulation-Very good answers<br><br>Syllabus section: 8.25, Modulation-Some very good answers.<br><br>Syllabus section: 8.24, Generally well answered |

| Section 2 – Areas for development (question no/syllabus topic or reference) |
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| Syllabus section: 1.17, Statistics (Histogram): The question required that the modal value be indicated on the histogram. Many candidates showed how to find the modal value but did not indicate what the actual value was.<br><br>Syllabus section: 1.5, Number systems: The subtraction should have been carried out using complimentary addition. Many candidates used alternative methods which gave the correct answer was not the required solution.<br><br>Syllabus section: 1.22, Statistics: Stating the names of the required terms in the formula was insufficient, the question asked for an explanation of the terms.<br><br>Syllabus section: 2.18, Logic Gates: Candidates were able to construct the Karnaugh map but were unable to use the grouping method of minimisation. Most attempted the solution by Boolean algebra with varying amounts of success.<br><br>Syllabus section: 2.22, Logic Gates: This part gave many problems. Candidates seemed to find it difficult to convert from standard gates to NOR equivalent.<br><br>Syllabus section: 3.2, DC Power Supply: It is unusual that this question gave so many problems. Many candidates seemed to think that the frequency of the supply caused damage to electronic circuitry. Not many related to the type of components in the circuit and formulated an answer from there.<br><br>Syllabus section: 3.10, Electronic Systems: Very few correct answers here. Most candidates gave general sources of distortion instead of describing how non linearity caused distortion. Some reasonable answers did discuss the linear responses of amplifiers with reference to transistors and some related to the linear range of a discriminator but not many.<br><br>Syllabus section: 3.14, Transmission systems: Not many diagrams for this question were well drawn. A fundamental problem that existed with many of the layouts was the receiver being shown as a transmitter.<br><br>Syllabus section: 3.14, Transmission systems: Question asked for ‘benefits’ but the majority of answers gave applications or operating principles of serial and parallel transmission.<br><br>Syllabus section: 3.19, Transmission systems: Explanations of the term Broadband seemed to be a problem to many candidates with various wrong answers given.<br><br>Syllabus section: 5.18, Decibels: Many answers to benefits of decibels stopped before the actual benefit was stated.<br>For example “the numbers involved are smaller” but the benefits like resulting in calculations become simpler or less chance of errors are omitted.<br><br>Syllabus section: 6.2, Transmission lines: In many cases “primary coefficients” were stated and not explained.<br><br>Syllabus section: 6.5, Transmission lines: Axes on the characteristics were often wrong or not given.<br><br>Syllabus section: 6.20, 6.21, Transmission lines: Sketches of waveforms were not of a good standard.<br><br>Syllabus section: 7.3, 7.4, Filters: Many answers had the labels missing on the axes.<br><br>Syllabus section: 8.19, 8.25, Frequency Modulation: Many candidates described Frequency Deviation and not Maximum Frequency Deviation. |

| Section 3 – Recommendations |
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| Where a question is answered using alternative calculation or deviating from the required explanation, it is possible that the question has been misread. It is important the question is read carefully and fully understood before answering. (Syllabus section:1.17, 3.10)<br><br>Labelling on axes of graphs and characteristics should be studied carefully when revising for examination. (Syllabus section:6.5, 7.3, 7.4)<br><br>In a very small number of cases I have seen that calculations have been left without final answers. There could be cases where a scientific calculator was not available. It would be to the candidate's advantage to obtain a calculator for their examination. |