



Report on multiple-choice Question Paper

Paper: 7730-001 Novice Radio Amateurs' Examination

Examination date: 9 September 2002

Syllabus Topic or Objective	Number of items	Comments on performance of candidates
1 Receivers and receiving techniques	5	<p>The section on receivers was generally not well answered. 38% of the candidates confused the squelch control with the noise limiter, not realising that the purpose of the squelch was to mute the receiver audio while tuning between stations.</p> <p>Many candidates were unaware that the convention is to use upper sideband s.s.b. on bands on and above 14MHz.</p> <p>In a block diagram of a simple tuned radio frequency receiver half the candidates chose to insert the detector stage before, rather than after the r.f. amplifier stage.</p>
2 Components, applications and units	3	<p>All three questions in this section were well answered by most of the candidates.</p>
3 Measurements	4	<p>Half of the candidates did not realise that an analogue milliammeter would be damaged if it was connected directly across the terminals of a 12V battery. One third of the candidates thought that the meter would show no response.</p> <p>Only 21% of the candidates were able to describe how they would measure the d.c. input of the power amplifier stage of a transmitter. Half of them would have merely connected a multimeter between the base and collector of the output transistor.</p>
4 Propagation and antennas	5	<p>In a question which gave a choice of aluminium, brass, glass and wood for the most suitable material for antenna insulators, only 37% chose glass as their answer. One third of the candidates thought that aluminium was a suitable insulator.</p>
5 Transmitters and transmitting techniques	10	<p>Most of the questions in this section were well answered by most of the candidates.</p> <p>Another question on the practical measurement of d.c. input was badly answered, only 42% of candidates answering it correctly.</p> <p>One third of the candidates were confused with the difference between harmonics and sidebands when audio frequencies and radio frequencies were mixed together.</p>

continued overleaf

Syllabus Topic or Objective	Number of items	Comments on performance of candidates
<p>continued</p> <p>6 Operating techniques</p> <p>7 Station layout</p> <p>8 Construction</p> <p>9 Safety</p> <p>10 Licensing conditions</p>	<p>6</p> <p>1</p> <p>1</p> <p>2</p> <p>8</p>	<p>In a question about interference in the form of spots on a television screen, 29% of candidates chose a cordless telephone rather than a vacuum cleaner as a likely cause.</p> <p>A question on the recognition of Intermediate Licence call signs caused difficulty with some candidates. If the Scottish station 2M0ZZZ was operating from a temporary location in England, the call sign used would be 2E0ZZZ/P.</p> <p>The other questions were well answered.</p> <p>One third of the candidates thought that a Morse key should <i>not</i> be fastened down or weighted.</p> <p>25% of candidates knew that the tip of a soldering iron should be tinned in order to prevent oxidation, but 58% said that the purpose of tinning an iron tip was to ensure that it made good electrical contact with the metal being soldered.</p> <p>Both the questions on safety were well answered.</p> <p>Most of the questions on the Licence were well answered, only one of them requiring comment.</p> <p>Of the choices available, half of the candidates answered correctly that the post code should be given to identify the location when the station is operating from a temporary location. 42% of the candidates thought that it was adequate to state the name of the largest town within a radius of 10km. [BR68/I 7(2)(a) and note (v)]</p>
<p>General comments on the paper</p>	<p>Candidates were well prepared for the examination despite recurring difficulties with the understanding and measurement of transmitter d.c. input power.</p> <p>There was a national total of 24 candidates for the examination of whom 21 (87.5%) of them were successful.</p> <p>Due to the small number of candidates for the Novice Radio Amateurs' Examination, City and Guilds is to cease offering this examination from the end of 2002. The final opportunity for the NRAE to be taken as a City and Guilds award will be on Monday, 9 December 2002. This may interest prospective Intermediate Licensees including existing Foundation Licence holders wishing to progress to the next stage.</p> <p>Reports for the Radio Amateurs' Examination (7650) and the Novice Radio Amateurs' Examination (7730) are normally available on the Internet about three weeks after the date of each examination at</p> <p style="text-align: center;">http://www.g4dmp.co.uk/</p>	