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OTS 99

Report on multiple-choice Question Paper

Paper: 7730-001 Novice Radio Amateurs Examination Examination series: March 1997

Syllabus Topic or Objective	Number of items	Comments on performance of candidates
1 Receivers and receiving techniques	5	Most questions were well answered, but a quarter of the candidates thought that f.m. was the most popular mode used on the 28MHz band, rather than upper sideband s.s.b.
2 Components, applications and units	3	A question on the resistor colour code was not well answered, many candidates answering 55Ω for a Green, Green, Gold resistor, instead of 5.5Ω.
3 Measurements	4	Only 37% of the candidates answered correctly a question that asked how the d.c. input power of a transmitter is measured. Those answering incorrectly either confused d.c. input power with r.f. output power, or would have connected a multimeter between base and collector of the output transistor.
4 Propagation and antennas	5	Most of the questions in this section were well answered. The only question that caused some difficulty was one that asked about the polarisation of a ground plane antenna. Nearly a third of the candidates thought it was horizontally polarised.
5 Transmitters and transmitting techniques	10	Several questions on transmitters caused difficulty. 40% of the candidates chose to use an s.w.r. meter to check for the presence of harmonic radiation from a 3.5MHz transmitter, rather than use a general coverage communications receiver. There was also some confusion about heterodyning and modulation when two frequencies are mixed together. 37% of the candidates said they would fit a low pass filter instead of a high pass filter to a TV set to minimise interference from an h.f. transmitter. In a question about the initial step to take when a neighbour reported television interference, many candidates suggested fitting a low pass filter to the TV receiver. Of the options given, the correct response would be to increase the distance between the antenna and the TV aerial.

continued overleaf

Syllabus Topic or Objective	Number of items	Comments on performance of candidates
continued		
6 Operating techniques	6	All questions on operating techniques were very well answered.
7 Station layout	1	Candidates knew that an antenna was an essential part of a mobile station.
8 Construction	1	Most candidates were aware of the effect of too much heat when soldering a transistor.
9 Safety	2	95% of candidates said they would wear goggles when they drilled a 10mm diameter hole in sheet of aluminium. The question on the correct rating of fuse to use in a 13A mains plug was also well answered.
10 Licensing conditions	8	All the questions on licensing conditions were well answered.
General comments on the paper		Candidates were generally well prepared for the examination and obtained good scores. Although most candidates gave correct responses to the specific questions on the licensing conditions, it must be remembered that other questions in the paper relate to these. It is essential that candidates know how to measure the d.c. power input and r.f. power output of low power transmitters. The licence schedule quite clearly quotes the maximum d.c. input as 5 watts and the r.f. output as 3 watts. It is important that novice licensees are able to measure their power to ensure that the licensed power is not exceeded. They are also required to enter the power in the station log as required under clause 6(1)(e) of the licence. An exercise in the practical course would assist in overcoming this difficulty. This report is based on the analysis of the results of 235 candidates of whom 198 (84.3%) were successful. All centres returned their question and answer papers it time for them to be included in the analysis.