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City & Guilds

OTS 99

Report on multiple-choice Question Paper

Paper: 7730-001 Novice Radio Amateurs Examination Examination date: 11 March 2002

Syllabus Topic or Objective	Number of items	Comments on performance of candidates
1 Receivers and receiving techniques	5	Many candidates thought that the purpose of the main tuning control of a transceiver was to select the required band rather than to change the operating frequency. In a question that asked candidates to select from a block diagram the stage which demodulates an incoming signal, 35% of the candidates chose the mixer stage instead of the detector. The other questions on receivers and techniques were well answered.
2 Components, applications and units	3	All three questions in this section were very well answered by most of the candidates.
3 Measurements	4	58% of candidates were unable to select the correct meter to measure the current to a transmitter power amplifier stage having a d.c. input of 6W and connected to a 12V supply. The current would be 0.5A making the 0–1A meter the most suitable. 35% of the candidates chose to use a 0–12A meter. In another question concerned with transmitter power, 32% of candidates were unable to calculate the input power when the power amplifier drew a current of 2A when applied to a 6V supply.
4 Propagation and antennas	5	Most of the questions in this section were well answered but there was some difficulty with a question about the most suitable antenna to communicate with several mobile stations. Many candidates chose either a Yagi or a horizontal dipole rather than a ground plane which would provide omni-directional coverage.
5 Transmitters and transmitting techniques	10	Of the ten questions in this section only one caused difficulty with most of the candidates. In a block diagram of a 3.75 MHz amplitude modulated transmitter, candidates were asked the purpose of a low pass filter in the output to the antenna. 39% of the candidates thought that its purpose was to pass the lower sideband and reject the upper sideband, evidently confusing it with the sideband filter in an s.s.b. transmitter. The low pass filter was provided to reject all frequencies above 4.5 MHz thereby preventing harmonic radiation.

continued overleaf

Syllabus Topic or Objective	Number of items	Comments on performance of candidates
continued		
6 Operating techniques	6	This section was very well answered, but 36% of candidates thought that it was necessary to be a licensed amateur to receive QSL cards from the RSGB QSL bureau. As short wave listeners (SWLs), candidates may also receive cards from the bureau in acknowledgement of their listener reports to amateur stations.
7 Station layout	1	Very well answered by nearly all of the candidates.
8 Construction	1	Most of the candidates knew that aluminium was difficult to solder.
9 Safety	2	The questions on earthing and on ventilation while soldering were very well answered.
10 Licensing conditions	8	As is usual, most of the questions on the Licence were very well answered. In a question about giving details of the location when operating from a Temporary Location, 68% of candidates thought that the location should be given every 15 minutes rather than every 30 minutes. [BR68/I 7(2)(a)] In another question about operating from a Temporary Location, this time without using the /P suffix, many candidates said they would notify the Secretary of State instead of the Operations Manager of the local office of the Radiocommunications Agency in whose area the operation is to take place. [BR68/I 7(2)(b)]
General comments on the paper		Candidates were generally well prepared for the March 2002 examination but there is one area that requires particular attention and emphasis. Transmitter power measurement is an essential requirement to ensure that the licensed power is not exceeded. Many candidates continue to be unable to calculate power from given parameters. More practice would appear to be required in the use of formulae such as $W = V \times I$, $V = W/I$, $I = W/V$, $W = I^2R$, $W = V^2/R$. This report is prepared from a detailed analysis of the results of 97 candidates of whom 84 (86.6%) were successful. The next Novice Radio Amateurs Examination is scheduled to take place on Monday, 10 June 2002. The City and Guilds fee for the examination is £14.00. 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 http://www.g4dmp.co.uk/

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