

The Radio Amateurs' Exam is divided into two parts: the first assesses knowledge of the licencing conditions while the second assesses technical competence. Both sections require a pass or the exam will be failed as a whole.

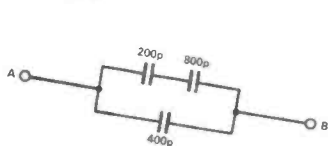
The questions given here should be answered without any reference to textbooks or other teaching aids. Don't cheat as you won't be able to when you sit the real exam!

Simply ring or tick the correct answer options. Look in next month's issue of Ham Radio Today to see if you would have got your ticket.

- 1) Many VHF and UHF repeaters have a pause between the end of audio transmission and the generation of a tone, usually "K" or "T". The reason for this is:
- it takes time for the repeater to switch from transmit to receive mode
  - to give the opportunity for other stations to use the repeater
  - to identify the repeater
  - to give the operator time to switch from transmit to receive mode

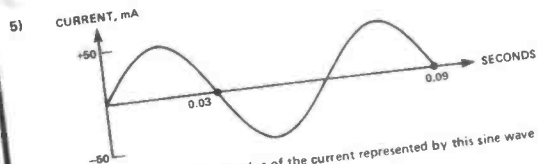
- 2) Using the recommended radio-telephony phonetic alphabet G2MUR would be sent as:
- Golf 2 Mike Uniform Radio
  - Golf 2 Mexico Uniform Radio
  - Golf 2 Mike Uniform Romeo
  - Golf 2 Mexico Uniform Romeo

- 3) In a series tuned circuit with an inductance of 400  $\mu$ H and a capacitance 144 pF, the resonant frequency will be:
- 66.3 kHz
  - 663 kHz
  - 0.0663 MHz
  - 6.63 MHz



The effective capacitance between terminals A and B is:

- 1400 pF
- 600 pF
- 285 pF
- 560 pF



The frequency and RMS value of the current represented by this sine wave is:

- 16 Hz 70.7 mA
- 11 Hz 35.4 mA
- 16 Hz 35.4 mA
- 33 Hz 70.7 mA

- 6) The current gain of a transistor used in a common collector (emitter follower) connection is 50. The external emitter resistance to ground is 10K ohms. The device input resistance will be approximately:

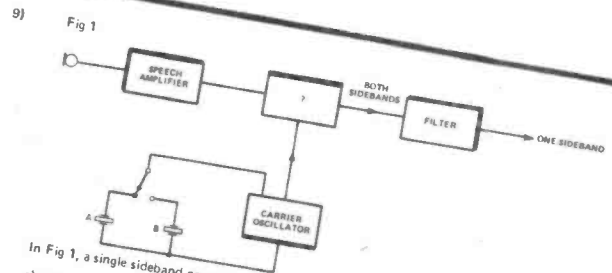
- 500K ohms
- 200 ohms
- 5000 ohms
- 5M ohms

- 7) A transistor amplifying with an efficiency of 50% or less is likely to be operating in:

- class A
- class AB
- class B
- class C

- 8) If the input frequency to the mixer stage of a radio receiver is 1.8 MHz and the required intermediate frequency is 470 kHz, the local oscillator frequency should be tuned to:

- 470 kHz
- 1800 kHz
- 2270 kHz
- 2740 kHz



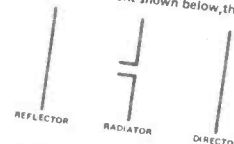
In Fig 1, a single sideband generator, what label should be given to the box marked:

- unbalanced modulator
  - balanced modulator
  - buffer amplifier
  - voltage controlled attenuator
- 10) In Fig 1, what is the purpose of the two components marked A and B:
- to switch frequency bands
  - to switch from transmit to receive
  - to provide upper and lower sidebands
  - to allow for repeater frequency shift

- 11) A 30 MHz half wave dipole has an input impedance of about 80  $\Omega$  when the length L and height H are:

	L metres	H metres
a)	5	2.5
b)	2.5	5
c)	2.5	2.5
d)	5	5

- 12) In the Yagi directional aerial arrangement shown below, the director is of length:
- A/2
  - A
  - more than A/2
  - less than A/2



- 13) Tropospheric propagation is usually the major mode for:
- frequencies below 30 MHz for local communications
  - frequencies above 50 MHz for local communications
  - frequencies above 1 GHz
  - frequencies above 50 MHz for line-of-sight communication

- 14) In order to measure the peak envelope power by the "two tone" test method, the following equipment is needed:

- an audio oscillator generating two tones, a dummy load and an oscilloscope
- a dummy load and an oscilloscope
- a dummy load and an audio oscillator generating two tones
- an audio oscillator operating at two known frequencies

- 15) A milliammeter M having a full scale deflection of 5 mA is to be used as a voltmeter measuring up to 200 V, the circuit needed will be:

