

## Instructions

Take no more than 45 minutes for this exam.

Treat this as a mock exam. Make sure you are not disturbed

Answer each of the following 36 questions.

Mark your answer choice on the special answer sheet. If available.

**DO NOT MAKE ANY REFERENCE TO BOOKS OR OTHER RAE INFORMATION**

Please do not show these questions to any person studying the RAE.

They may use this same set of questions and prior knowledge would defeat the object.

- 1] In order to hold a full (class A) Amateur Radio Licence the RAE should be passed:
- a) at any time previous.
  - b) within the previous twelve months.
  - c) in your own county.
  - d) within 100 km of your main address.
- 2] An Amateur station installed on a narrowboat that is navigating the Grand Junction Canal should have the following suffix added to the callsign:
- a) /M
  - b) /MC
  - c) /MM
  - d) /MJ
- 3] The station log should always use:
- a) the local time
  - b) UTC
  - c) UCT
  - d) Universal Standard Time
- 4] Which callsign should I use when I am mobile in Maidenhead.
- a) M4EGQ
  - b) GM4EGQ
  - c) G4EGQ/MM
  - d) G4EGQ/M
- 5] When chatting to another local amateur, on 145.525 MHz, you need only give your call sign every:
- a) 60 minutes
  - b) 30 minutes

- c) 15 minutes
- d) 10 minutes

6] What is the maximum height that an Amateur Radio aerial system may be erected if it is within one kilometre of an aerodrome?

- a) 20 metres
- b) 15 metres
- c) 10 metres
- d) 5 metres

7] A Radio Amateur uses Lower Sideband on 3.762 MHz. What emission code should be entered in his log?

- a) J3E    b) L3B    c) J3B    d) S3L

8] Which of the following Amateur Radio Stations are in Scotland?

- a) MM0ABC    b) MS0ABC
- c) SM0ABC    d) GS0ABC

9] A station log not be completed for

- a) mobile transmissions
- b) portable transmission
- c) unanswered CQ calls
- d) transmissions during peak TV hours

10] Amateur Radio Repeaters can be accessed by a tone of:

- a) 1750 Hz for 500 Sec
- b) 1750 Hz for 500 mSec
- c) 1570 Hz for 500 Sec
- d) 1570 Hz for 500 mSec

11] What is the meaning of this Q code?

"QRP?"

- a) Shall I decrease my power?
- b) Are you using low power equipment?
- c) I will reduce my power.
- d) Please reduce your power output.

12] A trap fitted into each leg of a dipole aerial is designed to:

- a) filter out an interfering frequency.
- b) provide neutral point for aerial support.
- c) prevent rain water entering coax cable.
- d) allow operation on more than one band.

13] A series LC tuned circuit has

- a) a high impedance at resonance.
- b) a low impedance at resonance.
- c) an infinite impedance at resonance.
- d) a negative impedance at resonance.

14] An audio transformer has a turns ratio of 1:10. Its impedance ratio will be:

- a) 1:100
- b) 1:3.14
- c) 1:1000
- d) 100:1

15] A variable capacitance diode enables an oscillator to:

- a) be frequency modulated
- b) be amplitude modulated
- c) remain on a stable frequency
- d) to generate single sideband

16] FM is obtained by modulating

- a) the first mixer stage
- b) the second mixer stage
- c) an audio amplifier stage
- d) an oscillator

17] A superhet receiver has an intermediate frequency of 500 kHz. The local oscillator is set to 3.0 MHz. Which of the following frequencies could be received?

- a) 1000 kHz
- b) 1500 kHz
- c) 2500 kHz
- d) 3000 kHz

18] A multiband transceiver:

- a) operates on several Amateur Bands
- b) has a split band audio output cct
- c) can receive 3 Amateur bands at once
- d) has 7 intermediate frequency stages

19] A transmitter is found to have an output that is mathematically unrelated to the required frequency.

This is likely to be due to:

- a) interfeon oscillations
- b) multiple harmonic distortion
- c) spurious oscillations
- d) parasitic oscillations

20] In the interests of EMC the amateur aerial should be:

- a) as high as possible
- b) close to the ground to avoid radiation
- c) away from his other aerials
- d) close to building frame to ensure good sheilding

21] A L.P.F. is usually included in the output of a H.F. transmitter to:

- a) eliminate sub-harmonics present in output
- b) ensure blocking of low parastic frequencies
- c) eliminate the fundamental frequency
- d) reduce harmonic content

- 22] Which type of transmission has the greatest bandwidth?
- a) A.M. speech
  - b) TV
  - c) SSB, full carrier
  - d) Double sideband
- 23] The morse key should not turn an oscillator on and off as this would result in:
- a) chirp      b) squegging
  - c) squawking      d) cheep
- 24] In operating is planned close to any band edge, you should:
- a) confirm frequency accuracy of transmitter
  - b) obtain authority from R.A.
  - c) use a carefully tuned, balanced aerial
  - d) obtain permission from service using adjacent frequency band allocation
- 25] A stub is used on a TV to reduce interference from a nearby 144.65 MHz Amateur transmitter. Its length should be:
- a)  $\lambda/16$                       b)  $\lambda/8$
  - c)  $\lambda/4$                       d)  $\lambda/2$
- 26] A key-click filter is included in an Amateur transmitter to:
- a) increase the Morse speed
  - b) to ensure a stable frequency
  - c) to reduce the generation of harmonics
  - d) to slow down Morse transmissions
- 27] An amateur aerial should be erected away from overhead mains cables to:
- a) reduce drain of mains consumption
  - b) prevent RF coupling
  - c) improve earthing
  - d) overcome ground conduction
- 28] Two radio frequencies can mix and cause interference to other frequencies in the presence of:
- a) a non-linear device
  - b) an extremely linear device
  - c) a non inductive attenuator
  - d) a non volatile substance
- 29] A TV is being affected by your transmissions. You could:
- a) fit a filter in the TV mixer stage
  - b) try a filter in the TV aerial lead
  - c) reduce TV mains by 10%
  - d) retune the TV radio frequency stage
- 30] Radio Amateurs:
- a) should only use SSB after a CW contact

- b) should reduce power after a CQ call
- c) should use minimum power for reliable communication
- d) should only transmit in the same mode as that received

- 31] The ionosphere is created by:
- a) CTC gasses that build up in the atmosphere
  - b) ultra violet radiation from the sun
  - c) the low atmospheric pressure
  - d) an increase in atmospheric pressure

- 32] M.U.F is:
- a) most used frequency
  - b) mean utilization of frequencies
  - c) minimise unstable frequencies
  - d) maximum usable frequency

- 33] A vertical dipole aerial will
- a) transmit in all direction of the compass
  - b) only transmit vertically
  - c) transmit a mainly horizontal wave
  - d) will be unsuitable in built-up area

- 34] A transmitter output power goes up from 2 Watts to 8 Watts. This represents a change of:
- a) 2 dB
  - b) 3 dB
  - c) 6 dB
  - d) 8 dB

- 35] Meters are marked as follows:
- a) 100 M per volt
  - b) 1 M per volt
  - c) 100 k per volt
  - d) 2 k per volt
- Which is the most sensitive?

- 36] The two tone test checks linearity.  
The two tones should be:
- a) harmonically related
  - b) equal in amplitude
  - c) of opposite phase
  - d) should be modulated with 100 & 50 Hz

Now check that you have attempted ALL questions and you have selected ONLY one answer for each question.

Post questions and answers within 24 hours of attempting this exam, to:  
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