

Amateur Radio Examination Foundation Level [E48158F]

Candidate: FOUNDATION, Mock (Mr) [N144838]

Date of Birth: 01 Jan 1950

Exam Centre: RSGB (RSGB TEST)

Date: Mon, 01 Nov 2021 09:00 GMT

This paper consists of 26 questions. **Time allowed:** 60 minutes

Candidate Declaration <i>I confirm that this is all my own work and that I have followed the rules of the examination.</i>	Candidate's Signature
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INSTRUCTIONS TO CANDIDATES

You should have 3 items.

1. This Examination Paper
2. An Optical Mark Sheet
3. Reference Data for use in the Foundation Level Examination

You will need a pen to sign this form and complete the Optical Mark Sheet, an HB Pencil and an eraser. You may use a silent, non-programmable calculator.

All questions have equal marks and all questions should be attempted.

Your answers should initially be marked in pencil on the Optical Mark Sheet or the examination paper itself. Errors should be corrected using your eraser. When you are satisfied that your answers are final, you should **INK IN** the answer box on the Optical Mark Sheet using a black pen.

Each question has 4 possible answers, identified 'A', 'B', 'C' and 'D'. Only one answer is correct, the others are wrong. You should decide which of the 4 answers is correct and mark the answer box for each question accordingly.

If you decide answer 'C' is correct, show this by shading in the box marked 'C' using an HB pencil.	A <input type="checkbox"/> B <input type="checkbox"/> C <input checked="" type="checkbox"/> D <input type="checkbox"/>
If you change your mind before inking-in, rub out the shading and shade in the box for your new choice.	A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>

When you are satisfied with your answer, shade in the whole box with **black ink**. Do **NOT** make any mark outside the box. **Once you have inked-in the Optical Mark Sheet, no changes can be made.**

The Reference Data booklet contains the Schedule to the Licence, the Band Plans, the Frequency to Wavelength Conversion Chart and the Frequency Allocation Table, which may be used to help answer any question.

The Optical Mark Sheet is designed to be machine marked and will provide your result for this Examination.

It must be completed during the time allowed for the Examination.

This paper, the Optical Mark Sheet and Reference Data Booklet must be handed in at the end of the Examination.

NOTICE TO CANDIDATES

You must not talk to or distract any other candidate in the exam room.

You are not allowed any assistance with the exam questions and the Invigilator is not permitted to discuss examination questions.

If you need other assistance, please raise your hand and talk quietly to an Invigilator when approached.

You may not leave the exam room without permission and may not re-enter the room unless you have been escorted by an Invigilator at all times.

You must only use black ink for your final answers on the Optical Mark Sheet, and any calculations may be done on the reverse of the Examination Paper.

Exam Papers and Optical Mark Sheets are **candidate specific**.

Please ensure this question paper and your OMR sheet has **your** name printed at the top, as incorrectly issued documents could deem the Examination **VOID**.

1. When MUST you tell Ofcom of a change of your main station address?

1A4.4183.3
N144838

- A.** Immediately on moving
- B.** After 1 month
- C.** After 5 working days
- D.** After 10 working days.

2. How often MUST you identify your station, by giving your callsign, whilst in contact with another station for a period of 25 minutes?

1A5.4217.1
N144838

- A.** At the beginning and end of the contact
- B.** At the beginning and end of each "over"
- C.** At the beginning and after five minutes
- D.** As often as is practicable.

3. The operator of a station contacted declines to give a call sign even when asked more than once; what action should be taken?

1C1.4254.1
N144838

- A.** Report the incident to the police
- B.** Repeat the question
- C.** Break off the contact
- D.** Record the contact.

4. In which country are you NOT permitted to operate using your Foundation Licence?

1F1.4317.1
N144838

- A.** Scotland
- B.** France
- C.** Jersey
- D.** Wales.

5. What is the status of UK amateur radio on 3.7MHz?

1G1.7522.2
N144838

- A.** Primary
- B.** Secondary shared
- C.** Secondary
- D.** Primary shared.

6. What is the maximum peak envelope power in Watts on 430.5MHz?

1G2.7526.2
N144838

- A. 10 Watts
- B. 1 Watt e.r.p.
- C. 10 Watts e.r.p.
- D. 1 Watt.

7. Which one of the following is an electrical insulator?

2A1.4373.1
N144838

- A. Copper
- B. Gold
- C. Silver
- D. Ceramic.

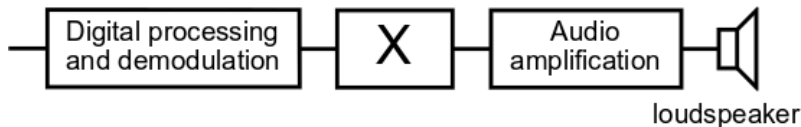
8. What wavelength corresponds to the 14MHz band?

2E7.4554.1
N144838

- A. 50 metres
- B. 20 metres
- C. 0.6 metres
- D. 40 metres.

9. The block diagram shows part of a radio receiver which uses digital processing to demodulate the radio signals. What is the function of the box marked 'X'?

2F2.7382.6
N144838



- A. Digital to analogue converter
- B. Analogue to digital converter
- C. Frequency demodulator stage
- D. Amplitude demodulator stage.

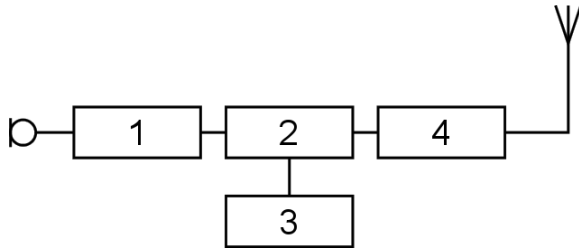
10. Modulation is the process of

3A1.4571.1
N144838

- A. ensuring the transmitter is on the same frequency as the distant receiver
- B. adding the data or voice to be transmitted to the radio frequency carrier
- C. extracting the transmitted data from the radio frequency carrier
- D. ensuring the transmitter is on the same frequency as the local receiver.

11. What is the function of the box marked '3' on the transmitter block diagram?

3B1.4627.1
N144838



- A. Modulator
- B. Audio amplifier
- C. RF power amplifier
- D. Oscillator.

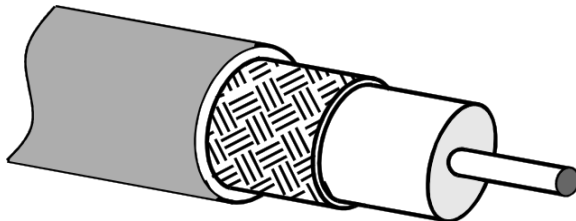
12. In a software defined radio (SDR) receiver the required signal is selected using

3M1.4709.1
N144838

- A. A low pass filter
- B. An anti-alias filter
- C. A filter defined in software
- D. A diode detector.

13. The cable shown in the drawing is normally used for

4A1.4716.1
N144838



- A. carrying mains power
- B. outdoor lighting
- C. radio frequency signals
- D. low voltage DC devices.

14. An antenna will

4C1.4731.1
N144838

- A. pick up radio signals and convert them into electrical signals
- B. provide an RF earth
- C. work equally well at all frequencies
- D. reflect radio waves away from the transmitter.

- 15.** Which type of cable is fitted to a PL259 plug?
- 4G1.4823.3
N144838
- A.** Two core AC mains
 - B.** 300Ω ribbon
 - C.** Three core AC mains
 - D.** 50Ω coaxial.
- 16.** The layers of conductive gases between 70 and 400km in height are known as the
- 5B1.4853.1
N144838
- A.** troposphere
 - B.** solarsphere
 - C.** ionosphere
 - D.** mesosphere.
- 17.** Which action will be most effective in extending the range for transmitting and receiving VHF or UHF signals?
- 5C3.7730.2
N144838
- A.** Increasing the height of the antenna
 - B.** Using UHF rather than VHF
 - C.** Using an indoor antenna
 - D.** Increasing the transmitter power.
- 18.** Which item is most likely to be affected by a local radio transmission?
- 6A4.4909.1
N144838
- A.** An electric bell
 - B.** An electronic calculator
 - C.** A domestic radio receiver
 - D.** An electric fire.
- 19.** Amateur transmissions might be picked up by
- 6C1.4932.1
N144838
- A.** only wiring that does not have an earth lead
 - B.** only wiring which is longer than 2 metres
 - C.** earth leads only
 - D.** any wiring in the neighbour's house.

20. It is proving difficult to determine how an amateur transmission is interfering with a neighbour's television. The amateur should try seeking help from the

6G1.5000.3
N144838

- A. Radio Society of Great Britain
- B. British Telecommunications
- C. planning department of the local council
- D. Radio Licensing Centre.

21. UTC is used for logging purposes because

7A5.5031.1
N144838

- A. it saves having to remember whether it is GMT or British summer time
- B. it is specified in the amateur licence for official purposes
- C. it is used worldwide to avoid confusion of different time zones
- D. it allows the shack clock to be left on the same setting, summer or winter.

22. To make a contact through a repeater you can hear on 145.600MHz you should transmit on

7C1.5071.1
N144838

- A. 145.000MHz
- B. 144.000MHz
- C. 146.200MHz
- D. 145.600MHz.

23. Getting an amateur friend to comment on your transmitted audio signal when you are using a new microphone is necessary because

7D1.5079.1
N144838

- A. the transmit frequency might need adjusting
- B. the microphone could be tuned to the wrong frequency
- C. not all microphones are suitably fused
- D. the microphone gain on the transmitter may need to be re-adjusted.

24. A fuse is formed from

8A4.6271.3
N144838

- A. a coil of wire
- B. a metal strip designed to melt at a specific current
- C. a junction of two different types of silicon material
- D. two metal plates separated by an insulator.

25. Eye protection should be worn when drilling in order to

8B1.5150.1
N144838

- A.** hold glasses (if worn) securely
- B.** allow closer inspection of the work
- C.** prevent swarf entering your eyes
- D.** allow greater drill speeds.

26. At an open day hosted by your radio club who is responsible for the safety of those attending?

8F5.5248.1
N144838

- A.** Everybody present
- B.** The RSGB
- C.** Ofcom
- D.** The police.