

# Amateur Radio Examination Foundation Level

Candidate:  
Candidate DoB:  
Centre:  
Exam Date:

This paper consists of 26 questions

**Time Allowed:** 55 minutes.

<p>Candidate Declaration.</p> <p>I confirm that this is all my own work and that I have followed the rules of the examination.</p> <p><i>I understand that breaches of the Examination rules may result in disqualification or other penalty and that breaches by the Examination Centre may invalidate the examination.</i></p>	<p>Candidate's signature.</p>
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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, an HB pencil and an eraser. You may use a silent, non-programmable calculator.

Check that your personal details on this Examination Paper and your Optical Mark Sheet are correct and sign both using your pen before the examination begins.

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

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.

Your answers should initially be marked lightly in HB pencil on the Optical Mark Sheet. Errors should be corrected using your eraser.

If you decide answer 'C' is correct, show this by marking box 'C' using an HB pencil.	A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>
If you change your mind before inking-in, rub out the mark and ink-in the box of your new choice	A <input checked="" type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/>
To confirm your original answer ink-in the whole box.	A <input type="checkbox"/> B <input type="checkbox"/> C <input checked="" 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 the result for this Examination. It must be completed during the time allowed for the Examination.**

**This paper, the Optical Mark Sheet and the 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 in answering exam questions and the Invigilator is not permitted to discuss examination questions. If you have a reader, the reader may read the questions to you but they cannot explain them.

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

If you wish to challenge an exam question please advise an Invigilator. They will not be able to help you answer the question, but will pass your challenge to the examination office.

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 use black ink for your final answers.

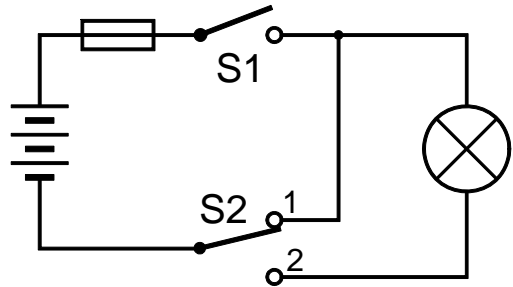
Any calculations should be done on the Examination Paper  
NOT the Optical Mark Sheet.

- 1 Which, of the items listed below, is NOT a type of Amateur licence?
- A Intermediate
  - B Foundation
  - C Beginner
  - D Full
- 2 When transmitting, you must give your call sign
- A when establishing contact and at least every 5 minutes
  - B when establishing contact and as frequently as is practicable.
  - C during CQ calls and at the beginning and end of the contact
  - D at the beginning and end of the contact.
- 3 You are talking to M3ABC using amateur radio and friends enter his room. You may also address remarks to these friends
- A if they are a family members
  - B if M3ABC gives permission
  - C if they are also amateurs
  - D but only on the calling channel.
- 4 If an amateur changes address, he/she MUST notify
- A the local council planning office
  - B the RSGB (Radio Society of Great Britain)
  - C Ofcom within 5 days of moving
  - D Ofcom immediately on moving.
- 5 On which one of the frequencies below may a Foundation licensee transmit?
- A 7.5MHz
  - B 15MHz
  - C 72MHz
  - D 145MHz
- 6 Which part of an amateur band is not permitted within 100km of Charing Cross, London?
- A 1.810-1.830MHz
  - B 51.00-52.00MHz
  - C 431.0-432.0MHz
  - D 438.0-440.0MHz

- 7 The correct formula relating the voltage,  $V$ , the current,  $I$ , and the resistance  $R$  is
- A  $R = V - I$
  - B  $R = V \times I$
  - C  $R = I / V$
  - D  $R = V / I$

- 8 To turn the bulb on in the diagram you should

- A set switch  $S2$  to position 2 then close switch  $S1$ .
- B close switch  $S1$  then set switch  $S2$  to position 2
- C close switch  $S1$  and keep switch  $S2$  at position 1
- D leave switch  $S1$  open and keep switch  $S2$  at position 1



- 9 The UK mains supply is

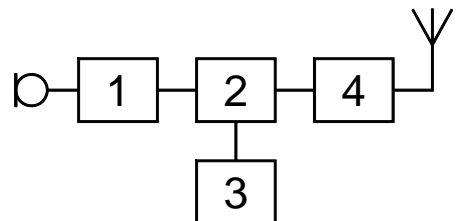
- A 230V D.C.
- B 230V 50Hz
- C 230V 60Hz
- D 230V 100Hz

- 10 The frequency 121.5MHz is used for

- A Aeronautical radio.
- B Amateur radio.
- C Land based radio.
- D Satellite radio.

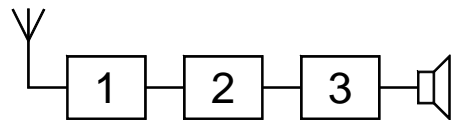
- 11 What is box marked '2' in the block diagram?

- A Frequency generation oscillator.
- B RF amplifier.
- C Modulator.
- D Audio amplifier.



- 12 Excessive microphone gain may cause
- A the transmit frequency to drift
  - B interference to adjacent channels
  - C the received voice to become higher in pitch
  - D the standing wave ratio to increase above its limits.

- 13 In the block diagram of a radio receiver shown the signal between box 1 and box 2 will be
- A several RF signals, probably all modulated
  - B a single modulated RF signal
  - C a low level audio frequency signal
  - D a fairly strong audio signal.

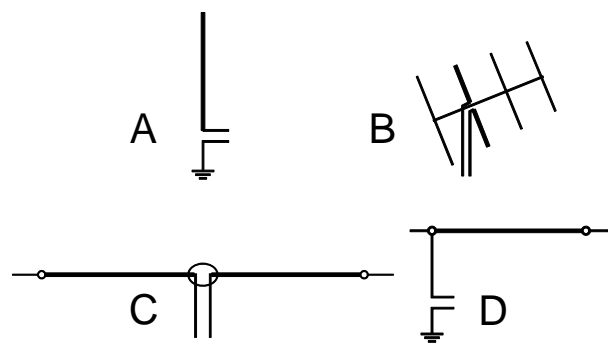


- 14 The photograph shows the rear panel of an HF transceiver. The feeder to the antenna should be fitted with a
- A PL259 plug
  - B BNC plug
  - C jack plug
  - D phono plug



- 15 Which drawing shows a dipole antenna?

- A Drawing A
- B Drawing B
- C Drawing C
- D Drawing D



- 16 An antenna is connected via the feeder directly to the transmitter but used on the wrong frequency. This will have the effect of.
- A reflecting some of the power from the transmitter back along the feeder
  - B risking damage to the antenna
  - C reducing the SWR on the feeder
  - D increasing the signal strength received at a distance from the transmitter.

- 17** An amateur wishes to achieve a greater range on VHF or UHF. Which option is likely to be most successful?
- A Increase the antenna height above surrounding roofs.
  - B Use a longer feeder to the antenna.
  - C Use UHF for greatest range.
  - D Move the antenna onto the ground in the garden.
- 18** The ionosphere is
- A layers of reflective gasses at heights of 70 to 400km.
  - B another name for the air we breathe.
  - C a type of spherical transmitting antenna.
  - D a piece of amateur radio test equipment.
- 19** A neighbour has a small battery powered domestic radio and a similar mains powered one. The mains powered one suffers interference when you transmit but the battery powered one doesn't. The interfering signal
- A must be getting into the mains through the transmitter mains power lead
  - B is probably being picked up by the aerial on the two receivers
  - C is probably a harmonic from your transmitter
  - D may be being picked up by the mains wiring to the radio.
- 20** Which transmission is MOST likely to cause interference?
- A A high power FM transmission.
  - B A low power FM transmission.
  - C A high power SSB transmission.
  - D A low power SSB transmission.
- 21** A neighbour complains that your transmissions were causing interference to his television. You should
- A say it's not your fault because you were operating in accordance with your licence
  - B advise him to inform the local authority
  - C advise him to contact Ofcom
  - D offer to help by initially checking the times of your transmissions.
- 22** Immediately before making an initial call an amateur should
- A make an entry in the log book
  - B listen on the frequency
  - C connect the feeder to a dummy load
  - D check the power supply is switched on.

- 23** Band Plans are published because
- A it is a convenient way of remembering the schedule to the amateur licence
  - B it allows the different modes and types of transmission to best share the band
  - C it allocates most of the band to the higher power stations
  - D it is illegal to operate in contravention of the band plan.
- 24** You are in contact with a friend by radio and he plays you a piece of music he has written. In reply you should
- A say it is not considered acceptable to play music on amateur radio.
  - B say it is against the terms of the licence to play music on amateur radio
  - C agree it is a nice piece of music and continue to chat about it.
  - D suggest a couple of changes might work and then play it again.
- 25** What is the most serious risk when working inside equipment that uses high voltages?
- A Such equipment is more likely to develop a fault.
  - B Spare parts are harder to obtain.
  - C High voltage equipment is more complicated and harder to repair.
  - D There is a risk of receiving a fatal electric shock.
- 26** You find an amateur friend lying on the floor, silent and apparently not moving, beside his transmitter which has fallen off the desk. Provided it is safe to do so, you should
- A go for help
  - B turn him face up
  - C switch off the power
  - D pull any microphone and other cables away from him.

**NOW GO BACK AND CHECK YOU WORK**

Answers

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
C	B	C	D	D	C	D	A	B	A	C	B	B	A	C	A	A	A	D	C	D	B	B	A	D	C