



Candidate: INTERMEDIATE, Mock THREE

Exam: Amateur Radio Exam Intermediate Level - **Syllabus V1.6b**

Centre: RSGB (RSGB – ONLINE REMOTE INV)

Date: Tuesday, 17 April 2026

1. Your own call is 2E1CYL and your friend GW1ZTZ has visited your home so you can operate at 400W under his guidance. You should use the call sign

1B1-2025-Int'd-2121

- A G1ZTZ.
- B 2E1CYL.
- C GW1ZTZ.
- D 2W1CYL.

2. A member of a User Service can

1C2-2025-Int'd-3296

- A use your Radio Equipment to send messages.
- B permit you to transmit out of band.
- C close down your station.
- D allow use of your Radio Equipment for fund raising.

3. A licensed amateur radio station must

1D1-2025-Int'd-1599

- A be available in times of emergency.
- B be kept locked when not in use.
- C not cause undue interference to other radio users.
- D avoid being audibly overheard late at night.

4. An amateur radio link used for the purpose of remote control of a transceiver must

1E1-2025-Int'd-8106

- A use a frequency in the 30m band.
- B not be encrypted.
- C be less than 500mW PEP.
- D use a different callsign to that of the main station.

5. The EIRP from an amateur transmitter has been determined to be at an average power level of 8W with a peak radiated power of 120W. Which statement below correctly describes the situation in relation to the EMF restrictions in the licence?

1G1-2025-Int'd-7990

- A The average level is above the compliance limit but the peak level is above.
- B The average level is above the compliance limit but the peak level is below.
- C The average level is below the compliance limit but the peak level is below.
- D The average level is below the compliance limit but the peak level is above.



6. On which one of the frequencies below, amateurs must accept interference from ISM users (Industrial Scientific and Medical)

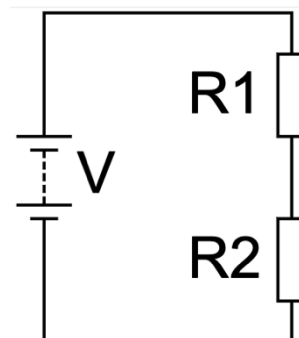
1H1-2025-Int'd-1742

- A 1.860MHz.
- B 2350MHz.
- C 431.5MHz.
- D 5840MHz.

7. In the circuit shown R1 is 200Ω and R2 is 600Ω . A voltage of 4V is measured across the 200Ω resistor, what is the voltage across R2?

2C1-2025-Int'd-2221

- A 16V.
- B 8V.
- C 4V.
- D 12V.



8. A transceiver in a shed is fed from a lead from a stabilised supply in the house. On low power transmit the current drawn is 1A and the terminal voltage at the rig is 13.2V. On high power it drops to 12.4V at a current of 5A. What is the terminal voltage on receive when the current is negligible?

2C3-2025-Int'd-3563

- A 13.2V.
- B 13.6V.
- C 13.4V.
- D 13.8V.

9. Polarised capacitors

2D3-2025-Int'd-2044

- A are usually very small.
- B have two identical and unmarked connections.
- C can be fitted either way round.
- D must be fitted the correct way round.



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10. A coil can have its inductance increased by

2D6-2025-Int'd-108

- A reducing the number of turns.
- B reducing the spacing between the turns.
- C mounting it vertically instead of horizontally.
- D reducing the diameter of the coil.

11. Which of the following signals would have the most heating effect when applied to a 50Ω non-reactive load?

2E3-2025-Int'd-725

- A 10V DC.
- B 12V peak AC at 60Hz.
- C 9V rms AC at 400Hz.
- D 20V peak to peak AC at 50Hz.

12. The term 'impedance' may be used when

2E6-2025-Int'd-2086

- A relating voltage to current in an AC circuit.
- B using a test meter to measure resistors.
- C considering the current drawn from a battery.
- D noting the field strength of a received radio signal.

13. A frequency of 432.675MHz is in the

2E7-2025-Int'd-1864

- A 2m band.
- B 70cm band.
- C 35cm band.
- D 7m band.

14. In a sampled system the minimum sampling rate for a given signal should be.

2F1-2025-Int'd-7860

- A half the Nyquist rate.
- B equal to the Nyquist rate.
- C twice the Nyquist rate.
- D greater than the Nyquist rate.



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15. A transformer

2G1-2025-Int'd-1238

- A can only be used with AC.
- B always has an iron core.
- C will change DC voltages.
- D will change one alternating frequency to another.

16. Energy can readily transfer between a capacitor and an inductor at a frequency known as the

2H3-2025-Int'd-1236

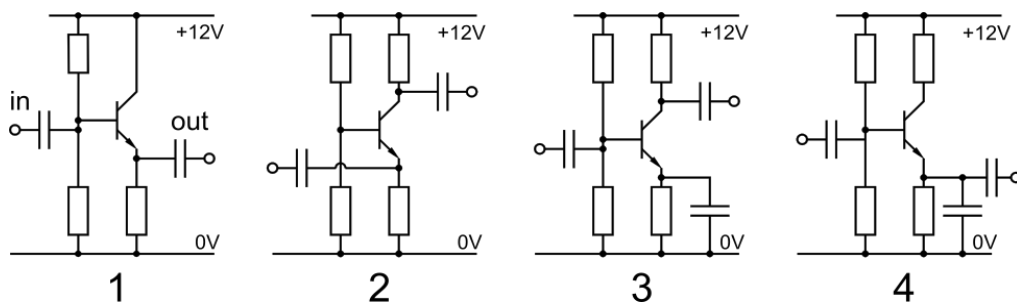
- A radio frequency.
- B maximum usable frequency.
- C rejection frequency.
- D resonant frequency.

17. The current gain β of a transistor is defined as

2I3-2025-Int'd-2264

- A I_E/I_C .
- B I_C/I_E .
- C I_C/I_B .
- D I_B/I_C .

18. Which circuit diagram is that of a common emitter amplifier?



2I4-2025-Int'd-7447

- A Circuit 1.
- B Circuit 2.
- C Circuit 3.
- D Circuit 4.

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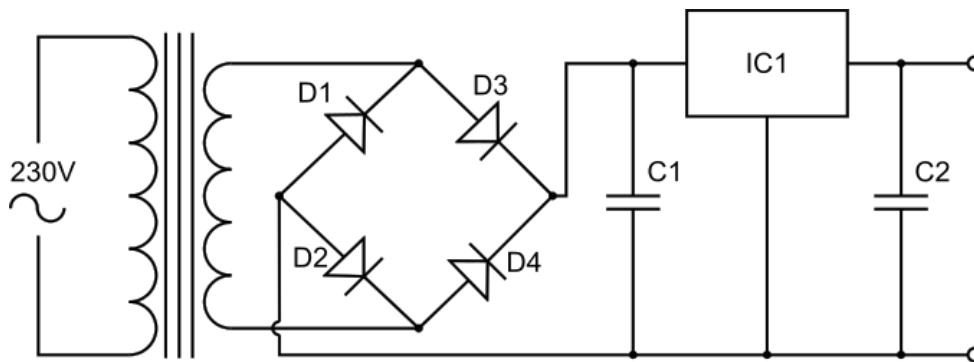
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19. Which ONE of the following components provides smoothing in a mains power supply unit?

2J3-2025-Int'd-947

- A Fuse.
- B Capacitor.
- C Rectifier.
- D Transformer.

20. The diagram is that of a power supply which



2J4-2025-Int'd-7464

- A uses a switched mode technology to reduce the weight, cost and size of the overall unit.
- B uses a ferrite transformer normally operating well above the 50Hz mains frequency.
- C is linear in operation with the regulation functions carried out by individual components
- D is linear and with most of the regulation functions carried out in an integrated circuit.

21. Which of the following is the main advantage of a variable frequency oscillator?

3C1-2025-Int'd-970

- A The frequency is able to be pulled.
- B The frequency will be very stable on a single channel.
- C The frequency is pre-set.
- D The frequency is able to be changed.



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22. Frequency modulation can be generated by

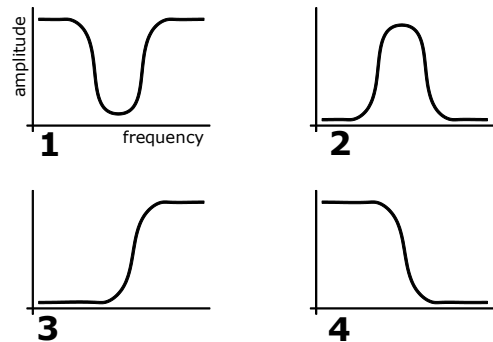
3E3-2025-Int'd-991

- A mixing AF and RF signals in a balanced modulator.
- B applying an AF signal to the DC power supply to the power amplifier.
- C applying an AF signal to a variable capacitance diode connected to an oscillator circuit.
- D keying a CW transmitter at a specific frequency.

23. Which ONE of the following frequency/amplitude diagrams shows the effect of a band pass filter?

3G3-2025-Int'd-1476

- A Diagram 4.
- B Diagram 3.
- C Diagram 2.
- D Diagram 1.



24. If the tuning sections of a radio receiver have a relatively low Q-factor then

3H4-2025-Int'd-7016

- A adjacent RF signals are more likely to interfere with the wanted signal.
- B adjacent RF signals are less likely to interfere with the wanted signal.
- C careful tuning is essential to pick up all the wanted signal.
- D background radio frequency noise will be markedly reduced.

25. In a superhet radio receiver, the RF amplifier

3I3-2025-Int'd-1498

- A selects the mode of the wanted signal.
- B changes the frequency of the wanted signal to the intermediate frequency.
- C selects a range of signals including the wanted signal.
- D selects only the wanted signal.

26. A receiver is being used to receive a CW signal on 10MHz. The receiver IF is set to 600kHz. The BFO frequency could be

3K1-2025-Int'd-1503

- A 599.3kHz
- B 10MHz.
- C 610kHz.
- D 600kHz.



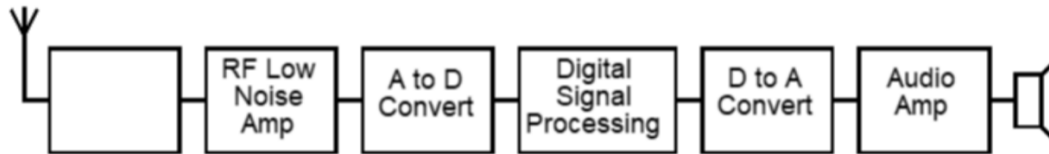
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27. An SDR receiver is shown in the diagram. What function is performed in the blank box?



3M3-2025-Int'd-7020

- A Fourier transform.
B Sampling.
C Low-pass filtering.
D High-pass filtering.
28. The primary purpose of a choke balun fitted on a coaxial feeder to a Yagi antenna is to

4B1-2025-Int'd-7577

- A ensure the directivity and gain of the antenna is not impaired.
B minimise the currents on the inner conductor of the feeder.
C avoid any RF currents flowing down the outer braid of the feeder.
D provide impedance matching to the antenna for a low SWR.

29. In order to increase the signal strength to and from long distance HF stations which of the following should be reduced?

4C5-2025-Int'd-578

- A Height of the antenna.
B Feed-point impedance.
C SWR on the feeder.
D Vertical angle of radiation.

30. A dipole antenna is fitted with a total of four traps. It should present a reasonable feed impedance on

4D2-2025-Int'd-7842

- A five bands.
B four bands.
C three bands.
D two bands.



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31. If an Antenna Matching Unit (AMU or ATU) is installed between the transmitter and the feeder to the antenna, and correctly adjusted it can

4F1-2025-Int'd-850

- A reduce the feeder loss.
- B have no effect on the actual SWR on the feeder between the AMU and the antenna feed-point.
- C change the polarisation of the transmitted signal.
- D affect the actual SWR on the feeder between the AMU and the antenna feed-point.

32. A signal on the 28MHz band can be heard by a listener five kilometers from the transmitter. The signal is travelling by the

5A2-2025-Int'd-1330

- A skip.
- B ionosphere.
- C ground wave.
- D sky wave.

33. A transmission that is refracted from the F2 layer can, in a single hop, reach a distance of approximately

5B3-2025-Int'd-639

- A 8000km.
- B 16000km.
- C 4000km.
- D 2000km.

34. Multi-wave VHF/UHF propagation arises when

5C3-2025-Int'd-7027

- A two amateurs are transmitting on the same frequency at the same time.
- B signals are reflected off buildings or aircraft only when there is no direct signal path.
- C signals are received from ground wave and sky wave propagation.
- D signals are reflected off buildings or aircraft in addition to the direct path signal.



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35. New electronic equipment that meets EMC regulations is MOST likely to suffer interference if

6A4-2025-Int'd-1053

- A it is being used in a domestic environment.
- B it has been poorly installed.
- C it is poorly designed.
- D it does not include commercial RF filters.

36. A local amateur transmission on 435MHz is causing interference to a nearby television which has a Yagi TV aerial on the roof and a masthead amplifier connected to the downlead to the TV. It is most likely that

6C2-2025-Int'd-1378

- A a harmonic of the amateur signal is interfering with the TV signal.
- B the amateur signal is being picked up directly by the television.
- C the television mains wiring is conducting the signal into the television.
- D the masthead amplifier is amplifying the amateur signal and overloading the television.

37. Which of the following could NOT be used to detect harmonics from a 3.5MHz transmitter?

6D3-2025-Int'd-1060

- A SDR dongle and associated software.
- B General coverage receiver.
- C Digital frequency meter.
- D Spectrum analyser.

38. The most severe risk in siting an amateur transmit/ receive antenna indoors close to mains wiring is that

6E3-2025-Int'd-1887

- A noise on the mains wiring will degrade the amateur receiving capabilities.
- B RF energy may get into the mains wiring.
- C fuses may not offer sufficient protection.
- D the risk of the amateur equipment becoming 'live' is increased.



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39. The International Amateur Radio Union produces

7B1-2025-Int'd-203

- A amateur radio band plans.
- B the international Radio Regulations.
- C amateur radio examinations.
- D cross-border reciprocal licensing agreements.

40. Most amateur satellites

7G1-2025-Int'd-1946

- A orbit the Earth and are only in view at certain times.
- B remain in view of their coverage at all times.
- C appear to be fixed above a particular point on the Earth.
- D are at heights of at least 500km.

41. What is the most important reason to avoid working on powered equipment?

8A6-2025-Int'd-7043

- A To avoid the possibility of unwanted transmission.
- B To minimise the risk of damage to the equipment.
- C To minimise the risk of electric shock.
- D To simplify the process of adjusting sensitive components.

42. Before using an electric drill it is important to

8B4-2025-Int'd-1971

- A remove glasses and goggles.
- B check the chuck key has been removed.
- C use an undersized drill bit.
- D ensure the work is properly earthed.

43. When transmitting from a stationary vehicle it is essential to consider

8D1-2025-Int'd-8095

- A the need to give your location correct to within 5km.
- B whether pedestrians might be inside the EMF compliance distance.
- C the possibility that passengers' voices may also be transmitted.
- D the risk of interference from the vehicle's ignition system.



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44. In adjusting the tuning of a radio receiver for maximum voltage output, the best device to be used is

9A3-2025-Int'd-2198

- A an absorption wavemeter.
- B a digital multimeter.
- C a frequency counter.
- D an analogue multimeter.

45. A power of 800W is the same as

9B1-2025-Int'd-8138

- A 27dBW.
- B 29dBW.
- C 30dBW.
- D 80dBW.

46. Soldering is a method of

9E1-2025-Int'd-2003

- A heating the flux to form a sticky compound which holds the items to be connected together.
- B using an iron to compress the items to be joined so they form a good tight joint.
- C joining wires and components by melting the copper of the items to be joined so they fuse together.
- D melting metal alloy with a low melting point to flow around the wires being joined.

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Answers INTERMEDIATE MOCK PAPER 3

Question	Answer	Question	Answer
1	A	24	A
2	A	25	C
3	C	26	A
4	B	27	C
5	D	28	C
6	D	29	D
7	D	30	C
8	C	31	B
9	D	32	C
10	B	33	C
11	A	34	D
12	A	35	B
13	B	36	D
14	B	37	C
15	A	38	B
16	D	39	A
17	C	40	A
18	C	41	C
19	B	42	B
20	D	43	B
21	D	44	D
22	C	45	B
23	C	46	D