

SAMPLE Question Paper

This paper consists of 45 questions, Duration 75 minutes.

INSTRUCTIONS TO CANDIDATES

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 the correct one and mark the answer box for each question accordingly.

If you decide answer 'C' is correct, show this by ticking in the box marked 'C'.

Take care to ensure your tick does NOT cover two boxes.

If you then change your mind, shade out the tick and tick the box for your new choice.

A [] B [] C [☐] D []

A [☐] B [] C ☐ D []

The Schedule to the licence, the Frequency Allocation Table, the Frequency to Wavelength Conversion Chart and the Band Plans may be used to help answer any question.

You may also use a calculator.

Family Name:

First names:

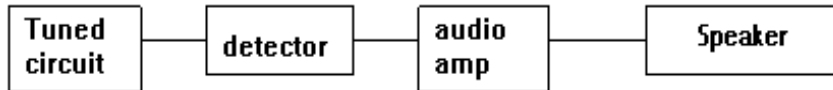
Date of birth:

Candidate Number:

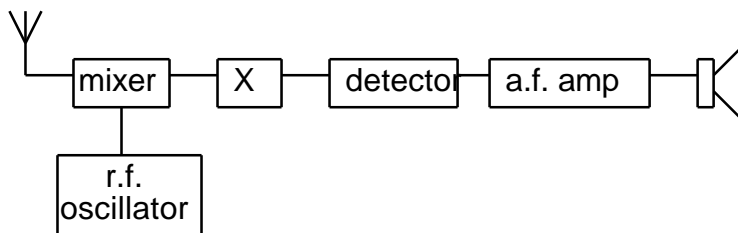
Test centre location:

Date of Test:

1. Diagram below shows the block diagram of a t.r.f. (straight) receiver. To which block is the aerial connected ?

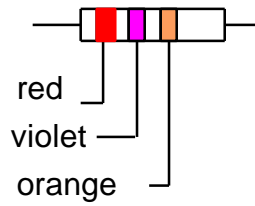


- A. Tuned Circuit.
B. Detector
C. Audio amplifier.
D. Transducer
2. Diagram below shows the block diagram of a superhetrodyne receiver for a.m. signals. What is block X.



- A. BFO
B. I.F.Amp
C. ATU
D. SWR meter
3. The controls of a receiver intended for the reception of fm amateur radio signals on the VHF amateur bands include the main tuning, r.f. gain, a.f. gain and
- A. Squelch.
B. Modulation gain.
C. P.A. tuning.
D. Tone.
4. When receiving an ssb telephony station it is necessary to
- A. Switch on the carrier insertion oscillator and tune the receiver until the signal is intelligible.
B. Ensure that the a.f. gain and r.f. gain controls are set at maximum.
C. Tune in the signal for maximum deflection on the S meter.
D. Turn down the squelch control to minimum.

5. Using the table , the value of the resistor is

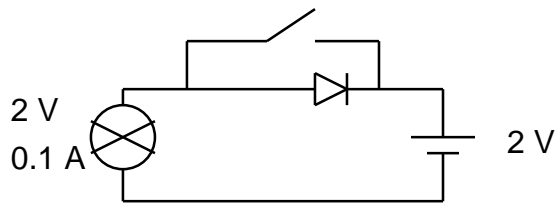


black	0
brown	1
red	2
orange	3
yellow	4
green	5
blue	6
violet	7
grey	8
white	9

- A. 2700 ohms
- B. 27000 ohms
- C. 370 ohms
- D. 3700 ohms

6. When the switch is closed the lamp will

- A. Light brightly
- B. Remain off
- C. Glow dimly
- D. Flash on and off



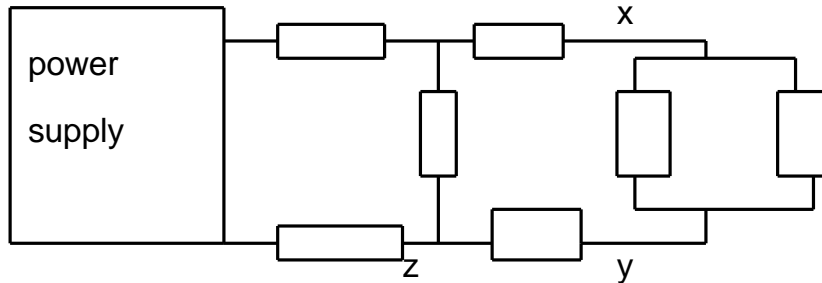
7. A multimeter has the following ranges

- Range A : 0-10 V dc
- Range B : 0-10 A dc
- Range C : 0-10 V ac
- Range D : 0-10 A ac

Which range should be used to measure the secondary voltage of a transformer labelled 8V, 3A ?

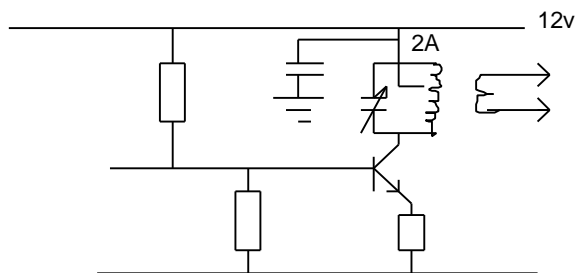
8. The total current can be measured on an ammeter by connecting the meter

A. Between points x and y
 B. To the two wires resulting when the wire at point x is cut
 C. Across the terminals of the power supply
 D. To the two wires resulting when the wire at point z is cut.



9. The d.c. input power of the transistor circuit is

A. 48 Watts
 B. 24 Watts
 C. 12 Watts
 D. 6 Watts



10. In order to obtain accurate readings when using an analogue test meter to measure resistance, it is important to

A. Ensure the meter is set to the lowest current range
 B. Adjust the meter to full scale with the test prods shorted together
 C. Reverse the test prods at the point where they are connected to the meter
 D. Measure the resistance of the component with the power switched on

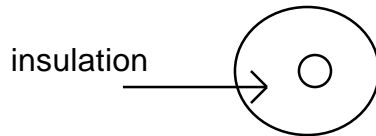
11. A ground plane antenna with four horizontal radials has a polarisation which is

A. Circular
 B. Horizontal
 C. Vertical
 D. Neutral

Intermediate Radio Amateur Examination - Sample Questions

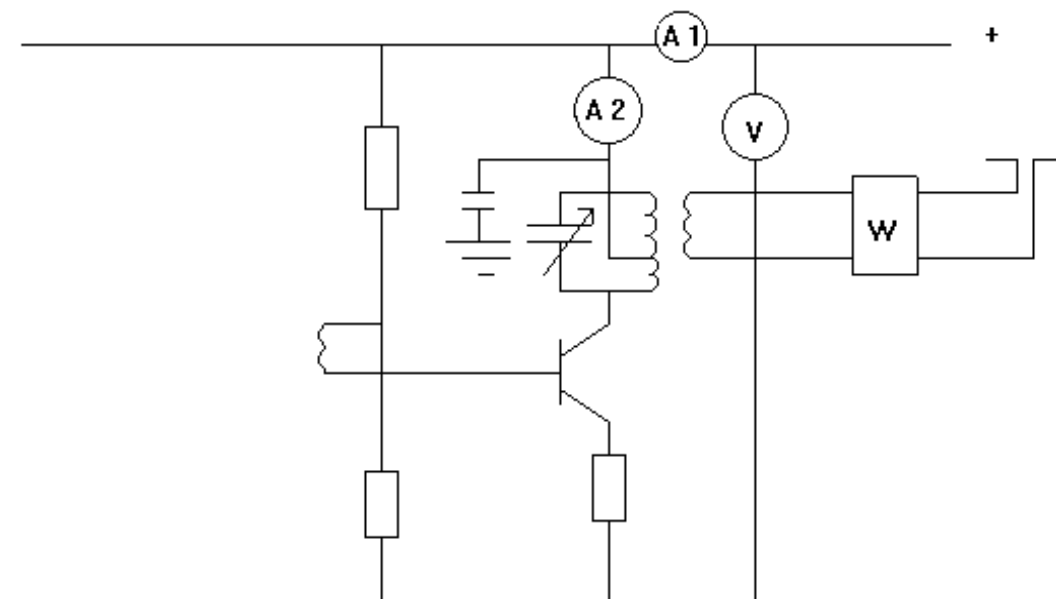
12. The maximum distance of communication of an fm signal on the 433 MHz band would typically be
- A. 20 km
 - B. 200 km
 - C. 2000 km
 - D. 20,000 km

13. The diagram shows the cross-section of a length of coaxial cable used to feed the unbalanced antenna system. The insulation between the inner and outer conductors is likely to be made of
- A. Polythene
 - B. Polystyrene
 - C. Silicon
 - D. Polyvinylchloride



14. The purpose of an antenna tuning unit is to
- A. Tune the antenna
 - B. Tune the antenna and transmitter
 - C. Match the antenna system to the transmitter
 - D. Match the antenna to the feeder.
15. A wavelength of 20 meters corresponds to a frequency of
- A. 150kHz
 - B. 1500kHz
 - C. 15MHz
 - D. 150 MHz.
16. If it is required to use a morse key plugged into the key jack of a transceiver, the mode switch should be set to
- A. CW
 - B. FM
 - C. LSB
 - D. USB
17. The third harmonic of a transmitter operating on 21.10 MHz is
- A. 7.033 MHz
 - B. 63.3 MHz
 - C. 63.3 GHz
 - D. 21.100 kHz

18. Which one of the following services could be affected by interference from the second harmonic of a transmitter operating on 3.58 MHz
- A. Medium Wave
 - B. Short wave radio
 - C. V.h.f. radio
 - D. Television
19. When operating a radio transmitter it is important to ensure that the radiation of harmonics is
- A. Adjusted for maximum
 - B. Constant on all bands
 - C. Passed to the antenna system
 - D. Reduced to a minimum
20. The most effective way for checking for the presence of harmonic radiation from a transmitter operating on 1.95 MHz is by
- A. Noting the readings of the forward and reverse current on the s.w.r. meter
 - B. Asking a remote station to listen on multiples of the transmitter frequency
 - C. Connecting a filter between the transmitter and the antenna system
 - D. Using a general coverage receiver to listen on 3.90 MHz, 5.85 MHz, and 7.8 MHz
21. The circuit shows the power amplifier stage of a low power transmitter, the r.f. power output is measured using which of the following meters
- A. A1 and V
 - B. A2 and V
 - C. V and W
 - D. W only



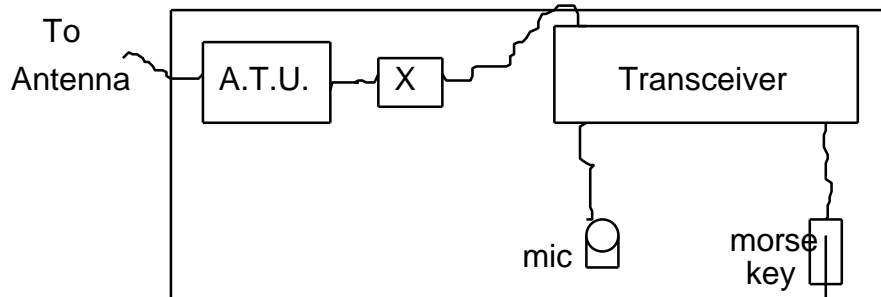
22. Sidebands are produced when
- A. A transmitter is operating very close to the band edge.
 - B. The antenna matching unit is being adjusted
 - C. A transmitter is being modulated
 - D. A station replies on an adjacent frequency
23. In a single side band transmitter , the purpose of the balanced modulator is to
- A. Allow only one side band to pass
 - B. Take out the carrier
 - C. Make two side bands
 - D. Amplify the modulation
24. Which one of the following would lessen the possibility of radio frequency (r.f.) energy entering the mains supply
- A. An indoor antenna
 - B. A low pass filter between the transmitter and the antenna tuning unit
 - C. A high pass filter between the transmitter and the antenna tuning unit
 - D. A low pass filter between the transmitter and its power supply unit
25. A good r.f. earth system is
- A. The earth connection on a 3 pin mains plug
 - B. The neutral connection on a 3 pin mains plug
 - C. The central heating system pipes
 - D. a direct low resistance connection to earth
26. A typical log entry is shown. If another station is logged as being received at 10.15 p.m. local time on the same day , what would be the entry in the second column of the log ?

Date	Start Time UTC	End Time UTC	Band	C/sign	Remarks
14.6.95	2105	2106	433	G0IPU	no reply

- A. 10.15
- B. 21.15
- C. 22.15
- D. 23.15

27. What is the Q code for change frequency ?
- A. QSA
 - B. QSB
 - C. QSY
 - D. QSO
28. The recommended phonetic spelling for the word EARTH is
- A. England America Russia Tokyo Holland
 - B. Echo Alfa Radio Tango Hotel
 - C. England Alfa Roger Tango Hotel
 - D. Echo Alfa Romeo Tango Hotel
29. When distributing QSL cards to stations overseas the cards should be sent to the
- A. The Radio Society of Gt. Britain QSL Bureau
 - B. National radio society of the overseas country
 - C. Radiocommunications Agency of the Department of Trade and Industry
 - D. Overseas branch of the Post Office
30. An initial call on morse should be transmitted as follows
- A. BK BK Bk BK BK G9XYZ G9XYZ G9XYZ G9XYZ G9XYZ R R
 - B. Bk G9XYZ G9XYZ G9XYZ G9XYZ G9XYZ G9XYZ G9XYZ K
 - C. CQ CQ CQ de G9XYZ CQ CQ CQ de G9XYZ K
 - D. CQ CQ CQ CQ CQ CQ CQ CQ CQ CQ de G9XYZ R
31. Which band would be suitable for a contact with the United States of America during a mid - winter afternoon during a sunspot maximum
- A. 1.95 - 2.00 MHz
 - B. 28.100- 28.500 MHz
 - C. 50.620- 51.75 MHz
 - D. 433.000- 435.000 MHz

32. Diagram shows the top view of a typical amateur radio station for morse and telephony. What is “X”
- A. An absorption wavemeter
 - B. An oscilloscope
 - C. A key click filter
 - D. An s.w.r. meter



33. Which one of the following should be used to make the connections between an antenna tuning unit, low pass filter and a transmitter
- A. Coaxial cable
 - B. Twin feeder
 - C. Stranded copper wire
 - D. Solid copper wire
34. Which of the following should be used to connect a transmitter to earth ?
- A. Coaxial cable
 - B. Twin feeder
 - C. Thick copper wire
 - D. Thin copper wire
35. Why should screened cable be used to connect a microphone to a modulator ?
- A. To prevent r.f. energy entering the modulator
 - B. To provide a low resistance connection
 - C. To match correctly the microphone to the modulator
 - D. To ensure the operator is protected from electric shock
36. When making adjustments to equipment that is switched on , it is advisable
- A. That one part of the body has a good connection with earth
 - B. To run the equipment above its normal ratings
 - C. To isolate oneself from earth by standing on a rubber mat
 - D. To use headphones so that adjustment may be detected more easily

37. What action should be taken if smoke comes from a mains operated power supply
- A. Call the fire brigade
 - B. Disconnect the unit from the mains
 - C. Shut all doors and windows
 - D. Pour water over the unit
38. The maximum r.f. output power which the holder of an Amateur Radio (Intermediate) Licence may use at the station is
- A. 1 Watt
 - B. 3 Watts
 - C. 10 Watts
 - D. 50 Watts
39. On which bands may the holder of an Amateur (Intermediate) Licence transmit
- A. 50.62 MHz and those in the Schedule above
 - B. All in the schedule between 1.95 MHz and 28.50 MHz
 - C. 144 MHz and those in the schedule above
 - D. All those in the schedule
40. The Amateur Radio Station Log must be retained for inspection by a person authorised by the Secretary of State for a period of at least
- A. One month
 - B. Three months
 - C. Six months
 - D. One year
41. During transmissions, the licensee shall transmit the call sign of the station at the beginning and at the end of each period of communication and at the end of each interval of
- A. 5 min
 - B. 10 min
 - C. 15 min
 - D. 30 min
42. An application for an Amateur Radio Intermediate Licence should be sent to
- A. Radio Society of Great Britain (RSGB)
 - B. Radio Investigation Service (RIS)
 - C. Radio Amateur Licensing Unit (RALU)
 - D. Secretary of State

- 43 Which of the following may be transmitted
- A. Music
 - B. Public broadcasts
 - C. Speeches
 - D. Remarks of a personal nature
44. The licence, log and the station of a novice licensee may be inspected by a person authorised by the
- A. Post Office
 - B. Radio Amateur Licensing Unit (RALU)
 - C. Radio Society of Great Britain (RSGB)
 - D. Secretary of State
45. Who may operate an Amateur Radio (Intermediate) Station
- A. Any person holding an Amateur Radio (Foundation) Licence
 - B. Any person holding an Amateur Radio (Intermediate) Licence
 - C. The licensee personally
 - D. Any person under the supervision of the Licensee

NOW RE-CHECK YOUR ANSWERS