

1. **Section 33 of the Telecommunications Order, 2001** states that any person who establishes, installs, maintains, provides or operates a telecommunication system or service within Brunei Darussalam without a license granted shall be guilty of an offence. Which of the following statement is CORRECT when a person commits an offence?
  - A. Any person guilty of an offence under this Order or any regulations made thereunder for which no penalty is expressly provided shall, in addition to the forfeiture of any article seized, be liable on conviction to a fine not exceeding \$10,000, imprisonment for a term not exceeding 3 years of both.
  - B. Any person guilty of an offence under this section shall be liable on conviction to a fine not exceeding \$10,000, imprisonment for a term not exceeding 1 year or both.
  - C. Any person guilty of an offence under this section shall be liable on conviction to a fine not exceeding \$50,000, imprisonment for a term not exceeding 3 years or both.
  - D. No fine is liable at all.
  
2. Which set of conversations should be avoided when transmitting Amateur Radio?
  - A. Hobbies, Education, and Entertainment.
  - B. Religion, Business, Politics, Racial and Ethnic Slurs.
  - C. Sport, Personal details and Socializing.
  - D. Weather, Location and Q-Codes.
  
3. Which statement is CORRECT regarding installation of Amateur Radio equipment in a vehicle?
  - A. One unit of licensed radio equipment is only allowed for one premise unless stated otherwise in the licence.
  - B. Radio equipment can be installed in any premise without any valid Amateur Radio licence.
  - C. Installation of radio equipment and antenna is not required to meet the specifications and regulations of building/residential code.
  - D. One unit of licensed radio equipment can be transferred anytime from one premise to another.
  
4. Which of the following operations of Amateur Radio is not permitted?
  - A. For communication on your car.
  - B. For your communication in your premise.
  - C. For marine operation on your boat to operate as a mobile station.
  - D. For off-road car expedition.

5. What is the validity period of Amateur Radio licence, temporary licence and an import permit for an Amateur Radio equipment from the date of issue respectively?
- A. One (1) year, One (1) month and six (6) months
  - B. One (1) month, three (3) months and fourteen (14) days.
  - C. Three (3) week, one (1) month and six (6) months.
  - D. One (1) year, three (3) months and fourteen (14) days.
6. If an Amateur Radio Licensee wants to terminate their Licence, they must:
- A. Submit termination application via AITI Online Services and also inform the status of equipment after licence has expired.
  - B. Disconnect their Amateur Radio equipment.
  - C. Inform their Amateur Radio association.
  - D. Submit termination application via AITI Online Services and state reasons for termination while informing the status of equipment prior to the licence expiry date.
7. What is the significant difference between AC and DC?
- A. Alternating currents are continually changing direction.
  - B. Direct currents are always greater than alternating currents.
  - C. Direct currents take a long time to change direction.
  - D. Alternating currents have a fixed polarity.
8. A station 'call sign' is sent for the purpose of identification at the start and end of transmission. It should be:
- A. mentioned once after the first sixty (60) minutes.
  - B. mentioned once after the first fifteen (15) minutes.
  - C. repeated every fifteen (15) minutes.
  - D. repeated every sixty (60) minutes.
9. If you purchase Amateur Radio equipment outside of Brunei Darussalam, what is the correct process when the said equipment arrives in Brunei Darussalam?
- A. Bring in the equipment without notifying Royal Brunei Customs and Excise Officials and seek approval from AITI.
  - B. Pay import duty for the equipment without seeking approval from AITI.
  - C. Declare the equipment to the Royal Brunei Customs and Excise officials, seek approval from AITI and pay for the import permit needed for the equipment.
  - D. Bring the equipment directly to AITI officials for approval.

10. Which of the following is NOT an offence in the *Telecommunications Order 2001*:

- A. Selling radio equipment without a licence.
- B. Operating an unapproved radio equipment on an unlicensed band.
- C. Operating an approved radio equipment with an expired operating licence.
- D. Operating another operator's radio equipment where both users are licenced.

11. What do you understand by 'Squelch'?

- A. A type of antenna.
- B. A function to reduce/increase the audio sensitivity when no desired signal is present.
- C. A type of conversation you have with 'Gaelic' native speakers.
- D. An equipment used to increase your transmitting signal.

12. What is the frequency band used by Amateur Radio for a "Very High Frequency" in Brunei Darussalam?

- A. 144.000 kHz – 148.000 kHz.
- B. 137.000 MHz – 156.000 MHz.
- C. 144.000 MHz – 148.000 MHz.
- D. 137.000 kHz – 148.000 kHz.

13. What does QTH mean?

- A. Where is your location?
- B. Who is calling me?
- C. You have a message for me?
- D. Are you busy?

14. Digital signals are:

- A. Constantly changing in amplitude, frequency or both.
- B. A stream of finite values at a specific sampling interval.
- C. Demodulated using a frequency discriminator.
- D. Created by a digital to analogue converter.

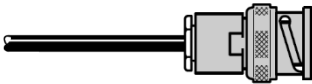
15. Why is it necessary for a 'Directional High-Gain' antenna to be placed higher than the surrounding buildings?

- A. To prevent it from collapsing.
- B. To avoid the antenna from damaging nearby buildings with its RF power.
- C. For the antenna to receive greater universal wave and low wave.
- D. To avoid the antenna from directing its excess RF power to the people in nearby buildings.

16. For 6 meter band, which one of the following frequency band is correct?

- A. 50.000 – 54.000 MHz.
- B. 6.000 – 6.999 MHz.
- C. 24.89 – 29.700 MHz.
- D. 5.025 – 5.925 MHz.

17. The connector shown below is a



- A. PL 259 Connector.
- B. Jack Connector.
- C. USB Connector.
- D. BNC Connector.

18. The most common input/output frequency offset for repeaters in the 2-metre band is:

- A. 1.6 MHz.
- B. 5.0 MHz.
- C. 0.4 MHz.
- D. 0.6 MHz.

19. What kind of amateur station simultaneously retransmits the signal of other stations on another frequency?

- A. Repeater Station.
- B. Beacon Station.
- C. Telex Station.
- D. Relay Station.

20. A person whose Amateur Radio licence has expired and has not been renewed for more than (three) 3 years shall be required to:

- A. Re-sit for Radio Amateur examination to ensure that they are up to date with current regulatory requirements.
- B. Sell their Radio Amateur equipment.
- C. Take a Morse Code test.
- D. Renew their licence through AITI online portal.

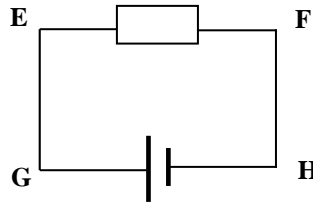
21. What requirements are needed for a foreigner to obtain a temporary Amateur Radio Licence in Brunei Darussalam?
- A. Applicant has to sit for AITI Amateur Radio exam.
  - B. Foreigners are not allowed to hold a local Amateur Radio licence.
  - C. A foreign guarantor, applicant must produce a valid foreign Amateur Radio licence and a copy of applicant valid passport.
  - D. A local guarantor, applicant must produce a valid foreign Amateur Radio licence and a copy of applicant valid passport.
22. What does 'CQ' and 'DX' stand for?
- A. Call quit/Closing down and Digital signal transmission.
  - B. Station call interference and Distance foreign countries.
  - C. Calling all station and Distance foreign countries.
  - D. Calling all station and Wait.
23. What is a simplex operation?
- A. Transmitting and receiving over a wide area.
  - B. Transmitting on one frequency and receiving on another frequency.
  - C. Transmitting and receiving on the same frequency.
  - D. Transmitting one-way frequency.
24. What information or details are required to be recorded in logbook for Amateur Radio operators when transmitting?
- A. Duration of conversation time, station callsign which with you are communicating with, frequency band and emission.
  - B. Duration of conversation time, station which with you are communicating with, frequency band, emission and power output, signal report, QSL.
  - C. Date, frequency band and emission, power output, conversation time, signal report, statement.
  - D. Date, frequency band and emission, power output, station callsign which you are communicating with, start and end of conversation time, signal report, QSL.
25. Band plans are used because:
- A. Using them is a condition of the licence.
  - B. They help prevent on-air abuse.
  - C. They are required for radio competitions.
  - D. They enable efficient use of the band for different services.

26. During your Amateur Radio conversation, what should you do when you hear 'BREAK'?
- A. Stop your conversation and turn off your equipment.
  - B. Keep on communicating and disregard the message.
  - C. Report this to AITI immediately for assistance.
  - D. Stop your conversation, release your frequency immediately and be on standby to assist if necessary.
27. The word "FREQUENCY" should be spelt phonetically, using the phonetic alphabet.
- A. Foxtrot, Romeo, Echo, Queen, Unicorn, Echo, November, Charlie, Yanky.
  - B. Foxtrot, Romeo, Echo, Quebec, Uniform, Echo, November, Charlie, Yanky.
  - C. Foxtrot, Romeo, Echo, Quebec, Uniform, Echo, November, Charlie, Yankee.
  - D. Foxtrot, Romeo, Echo, Queen, Umbrella, Echo, November, Charlie, Yankee.
28. What is the minimum age allowed to take the Amateur Radio examination in Brunei Darussalam?
- A. No minimum age limit.
  - B. 12 years.
  - C. 14 years.
  - D. 18 years.
29. What type of interference may come from a multi-band antenna connected to a poorly tuned transmitter?
- A. Auroral distortion.
  - B. Parasitic excitation.
  - C. Intermodulation noise.
  - D. Harmonic radiation.
30. Amateur Radio services, as a secondary service, are permitted to use the frequency band if:
- A. Amateur Radio user feels experienced enough.
  - B. It only interferes with other primary services.
  - C. It does not cause any interference to primary service.
  - D. The primary service operates at a lower power and used at the same time.

[END OF SECTION A MULTIPLE-CHOICE QUESTIONS]

1. Which direction is the electron flowing in the diagram below?

- A. From E to F
- B. From H to G
- C. From H -> F -> E -> G
- D. From G -> E -> F -> H



2. Current is defined as:

- A. A measure of electromotive (EMF) force between two points.
- B. Material property that opposes the flow of electrons.
- C. A measure of the flow of electrons through a conductor.
- D. The amount of energy per unit time expended by a system.

3. The process of modulation allows:

- A. Information to be removed from a carrier.
- B. Voice and Morse code to be combined.
- C. Information to be impressed on to a carrier.
- D. None of the above.

4. The wavelength of a signal in free space with a frequency of 100MHz is:

- A. 3 millimeter.
- B. 30 meter.
- C. 3 meter.
- D. 3 cm.

5. The correct formula for 'Charge' is:

- A.  $Q = V/R$ .
- B.  $Q = C/V$ .
- C.  $Q = CV$ .
- D.  $Q = C^2V$ .

6. Define the function of a Bandpass filter?

- A. Restrict high frequency.
- B. Restrict low frequency.
- C. Allow only data between two cutoff frequencies to pass.
- D. Allow data except between two cutoff frequencies to pass.

7. The output from the transmitter should be connected to the antenna by:
- A. Coaxial cable.
  - B. Waterproof mains cable.
  - C. Screened audio cable.
  - D. Fuse wire.
8. If 'c' is speed of light, 'f' is frequency and  $c=f\lambda$ , what does  $\lambda$  represent?
- A. Time.
  - B. Wavelength.
  - C. Amplitude.
  - D. Velocity.
9. What is the Unit(s) for each of the components (Capacitor, Ammeter, Resistor, Inductor) respectively?
- A. Coulombs, Meter, Ohm, Henry.
  - B. Coulombs, Ampere, Ohm, Farad.
  - C. Farad, Ampere, Ohm, Henry.
  - D. Farad, Ampere, Resistance, Henry.
10. What is the modulation used in "Very High Frequency" and "High Frequency" respectively?
- A. Single band and multiple band.
  - B. Amplitude modulation and frequency modulation.
  - C. Quadrature amplitude modulation and phase modulation.
  - D. Frequency modulation and amplitude modulation.
11. The frequency of a Variable Frequency Oscillator (VFO) is determined by
- A. The supply voltage.
  - B. The type of transistor used.
  - C. The particular circuit udes.
  - D. The inductance and capacitance of the tuned circuit.
12. Compared with an ordinary amplitude modulated signal a single-sideband signal:
- A. Occupies a wider bandwidth.
  - B. Is distorted.
  - C. Occupies half the bandwidth.
  - D. Is easier to tune in.



13. A three-element Yagi antenna of rods of unequal length, please arrange the elements in descending order:

- A. Driven element, reflector, director.
- B. Reflector, driven element, director.
- C. Director, driven element, reflector.
- D. Reflector, director, driven element.

14. Define the function of Low-pass filter and High-pass filter respectively?

- A. Restrict high frequency and restrict low frequency.
- B. Restrict low frequency and restrict high frequency.
- C. Channelling high frequency and channelling low frequency.
- D. None of the above.

15. The unit Watt (W) is a measure for:

- A. RF electric field strength.
- B. RF power.
- C. RF energy.
- D. RF voltage.

16. Which instrument would you use to measure an electric current?

- A. Ammeter.
- B. Thermometer.
- C. Voltmeter.
- D. Ohmmeter.

17. Define which antenna comprises of a center-fed driven element for transmitting or receiving radio frequency energy?

- A. Omni-directional Antenna.
- B. Half wavelength dipole.
- C. Yagi Antenna.
- D. Straight wire antenna.

18. Which of the following is a serious risk when fixing components of an equipment when the electricity is still switch on?

- 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.

19. For AC measurement, the value of Voltage-Root-Mean-Square ( $V_{rms}$ ) is:

- A. 0.5 peak voltage ( $V_{pk}$ ).
- B. 0.707 peak voltage ( $V_{pk}$ ).
- C. 1.0 peak voltage ( $V_{pk}$ ).
- D. 0.333 peak voltage ( $V_{pk}$ ).

20. What length of copper wire is required for the frequency of 28.071KHz on 10 meters?

- A. 8 ft 3 inch.
- B. 9 ft 3 inch.
- C. 12 ft 1 inch.
- D. 13 ft 1 inch.

21. Groundwave is defined as:

- A. Radio waves that reflect off the ionosphere.
- B. Radio waves traveling along the Earth's surface.
- C. Radio waves that is absorb by the ground.
- D. None of the above.

22. A decrease in power from 40 Watts to 20 Watts is equal to an attenuation of:

- A. 3 dB.
- B. -3 dB.
- C. -20 dB.
- D. 20 dB.

23. Resistance is defined as:

- A. A measure of electromotive (EMF) force between two points.
- B. Material property that opposes the flow of electrons.
- C. A measure of the flow of electrons through a conductor.
- D. The amount of energy per unit time expended by a system.

24. A power amplifier has a gain of -3dB. If you input 60W, the output would be?

- A. 30 W.
- B. 120 W.
- C. 120 kW.
- D. 30 kW.





25. 2 resistors are connected in parallel and are connected across a 240 volt battery. If each resistor is 5000 ohms, the total current is:

- A. 96 miliampere.
- B. 96 ampere.
- C. 9.6 milliampere.
- D. 9.6 ampere.

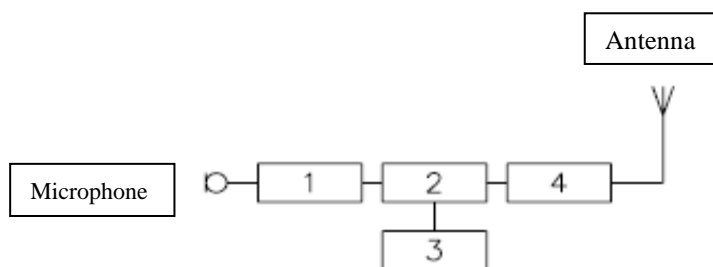
26. What length of copper wire is required for the frequency of 28.071KHz on 10 meters?

- A. 8 ft 3 inch.
- B. 9 ft 3 inch.
- C. 12 ft 1 inch.
- D. 13 ft 1 inch.

27. What is the symbol for Resistor?

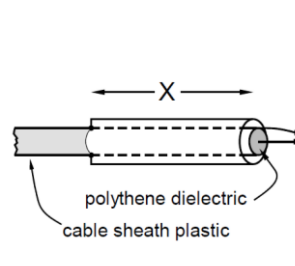
- A. 
- B. 
- C. 
- D. 

28. What is the correct component order on this transmitter block diagram?



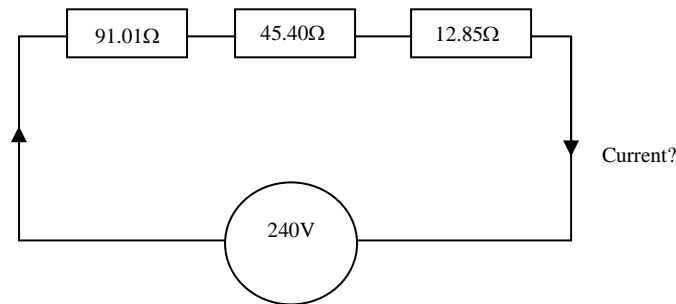
- A. Frequency generation oscillator (1), Audio amplifier (2), Modulator (3), RF amplifier (4).
- B. Audio amplifier (1), RF amplifier (2), Frequency generation oscillator (3), Modulator (4).
- C. Audio amplifier (1), Modulator (2), Frequency generation oscillator (3), RF amplifier (4).
- D. Modulator (1), RF amplifier (2), Frequency generation oscillator (3), Audio amplifier (4).

29. The drawing shows a metal sleeve balun suitable to connect a coaxial cable to a centred half-wave dipole. The distance marked 'X' should be?



- A.  $\lambda/2$  allowing for the permittivity of polythene.
- B.  $\lambda/2$  allowing for the permittivity of plastic.
- C.  $\lambda/4$  allowing for the permittivity of polythene.
- D.  $\lambda/4$  allowing for the permittivity of plastic.

30. What is the Current and the total Resistance of three resistors connected in series as shown below?



- A. 149.26 A and 1.61 Ohms.
- B. 622 mA and 389.26 Ohms.
- C. 622 A and 389.26 Ohms.
- D. 1.61 A and 149.26 Ohms.

[END OF SECTION B MULTIPLE-CHOICE QUESTIONS]