

SECTION A

This section contains 30 questions. Answer all.

1. Section 33 of the Telecommunication 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 should a person commit an offence?
 - A. 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.
 - B. 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.
 - C. 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.
 - D. No fine is liable at all.

2. Amateur Radio service is defined as:
 - A. A radio-communications service in which a station is used for the purpose of self-training, intercommunication and technical investigations carried out by amateurs.
 - B. A radio station that is owned by a commercial entity. To be qualified as such, it must also be advertiser-supported and for-profit.
 - C. A conventional radio system uses a dedicated channel (frequency) for each individual group of users for public and commercial purposes.
 - D. A cellular service that can be used for voice and data

3. All operations regarding station usage need to be recorded in a log book. What details are required to be included in the log book for amateur radio operators everytime they are on air?
 - A. Date, frequency band and emission, station callsign which with you are communicating, start and end of conversation time, signal report, QSL.
 - B. Date, frequency band and emission, power output, conversation time, signal report, statement.
 - C. Date, station callsign which with you are communicating with, frequency band and emission.
 - D. Date, station which with you are communicating with, frequency band, emission and power output

4. What are the requirements for a foreigner to obtain a temporary Amateur Radio Licence in Brunei Darussalam?
 - A. A local guarantor, applicant must produce a valid foreign amateur radio licence and a copy of applicant valid passport.
 - B. Applicant has to sit for AITI amateur radio exam.
 - C. Foreigners are not allowed to hold a local amateur radio licence.
 - D. Foreign guarantor, applicant must produce a valid foreign amateur radio licence and a copy of applicant valid passport.

5. Are you allowed to modify approved amateur radio equipment?
 - A. With permission from the Royal Brunei Police Force and Royal Brunei Custom and Excise.
 - B. If the equipment is modified by a certified dealer.
 - C. Any approved equipment is not allowed to be modified, without written approval from AITI.
 - D. Once you have obtained a licence and type approval for your equipment, you can immediately modify.

6. If an amateur radio licensee changes his/her residential address or car registration number (where the radio equipment is placed), he/she should notify:
 - A. Royal Brunei Police Force.
 - B. Post Office.
 - C. AITI.
 - D. The local radio club.

7. Before beginning a transmission, a good operator should:
 - A. sharpen his/her pencil.
 - B. measure transmitter input power.
 - C. notify AITI.
 - D. listen on transmitting frequency to be used.

8. The classes of Amateur Radio License in Brunei are:
 - A. Novice, Advances.
 - B. Standard, Advanced.
 - C. Class 1, Class 3.
 - D. Novice, Technician.

9. If you heard somebody calling you but cannot exactly make out his callsign, which "Q" code signal you would send?
 - A. QRS.
 - B. QRZ.
 - C. QRK.
 - D. QRM.

10. When should you use simplex operation instead of a repeater?
- A. When the most reliable communications are needed
 - B. When an emergency telephone call is needed
 - C. When a contact is possible without using a repeater
 - D. When you are traveling and need some local information
11. If you purchase amateur radio equipment from outside the country, what is the right thing to do upon arrival at the custom's control post?
- A. Bring in the said equipment without notifying Royal Brunei Customs and Excise official.
 - B. Pay import tax for the equipment.
 - C. Declare the equipment to the Royal Brunei Customs and Excise officials.
 - D. Bring the equipment directly to AITI officials.
12. What is the frequency band used by an amateur radio for a "Very High Frequency" in Brunei Darussalam?
- A. 144.000 kHz – 148.000 kHz.
 - B. 144.000 MHz – 148.000 MHz.
 - C. 137.000 MHz – 156.000 MHz.
 - D. 137.000 kHz – 148.000 kHz.
13. 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.
14. 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.
15. An amateur radio licensee should renew their licence
- A. No renewal required.
 - B. Annually.
 - C. Quarterly.
 - D. Bi-annually.

16. What type of operation which transmit and receive on a different frequency?
- A. Simplex Operation.
 - B. Multiplex Operation.
 - C. Duplex Operation.
 - D. All of the above.
17. A station 'Callsign' is sent for the purpose of identification at the start of transmission and end of transmission. It should be repeated for:
- A. Within the first 30 minutes.
 - B. Once after the first 15 minutes.
 - C. Every 15 minutes.
 - D. Once within 60 minutes.
18. Which of the following must be true before an amateur station may provide information during a disaster?
- A. The information must directly relate to the immediate safety of human life or protection of property.
 - B. When another amateur station declares a state of emergency.
 - C. The exchange of such information must be approved by a local emergency preparedness official.
 - D. None of the above.
19. The most common input/output frequency offset for repeaters in the 2-metre band is
- A. 1.6 MHz.
 - B. 0.6 MHz.
 - C. 5.0 MHz.
 - D. 0.4 MHz.
20. When using a repeater to communicate, which of the following do you need to know about the repeater?
- A. Its input frequency and offset.
 - B. The owner of the repeater.
 - C. Its power level and location.
 - D. Whether or not it has a mo patch.
21. What type of interference may come from a multi-band antenna connected to a poorly tuned transmitter?
- A. Auroral distortion.
 - B. Harmonic radiation.
 - C. Parasitic excitation.
 - D. Intermodulation noise.

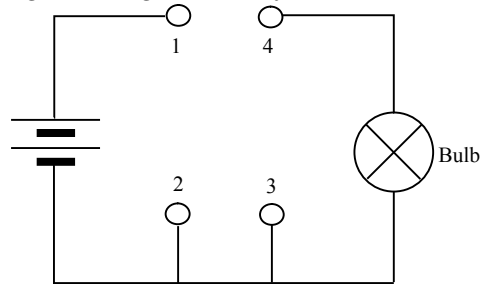
22. What is the correct callsign prefix for Standard and Advanced Class Amateur Radio Licence respectively?
- A. V85 and V89.
 - B. V89 and V85.
 - C. V8N and V8M.
 - D. V8B and V8A.
23. An activity wherein participants use radio direction finding techniques to locate one or more radio transmitters hidden within a designated area, is called?
- A. Fox Dancing.
 - B. Fox Hunting.
 - C. Dxing.
 - D. Echolink.
24. 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.
25. Which of the following uses the International Phonetic Alphabet?
- A. Alpha, Norway, Delta.
 - B. Denmark, Oscar, Gordon.
 - C. Alpha, Charlie, Tango.
 - D. Bravo, Uniform, Gordon.
26. What is the validity period of a licence, temporary licence and an import permit for an Amateur Radio equipment from the date of issue respectively?
- A. 1 year, 1 month and 6 months.
 - B. 1 month, 3 months and 14 days.
 - C. 3 weeks 1 month and 6 months.
 - D. 1 year, 3 months and 14 days.
27. Which of the following is the correct code used in Amateur Radio communications for "Best Regards" ?
- A. 74.
 - B. 77.
 - C. 73.
 - D. 88.

28. What material is best for antenna conductor?
- A. Copper.
 - B. Plastic.
 - C. Glass.
 - D. Aluminum.
29. 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.
30. Ahmad and Rafi is having an amateur radio conversation. Which set of conversations below should they avoid:
- A. Hobbies, Education, and Entertainment.
 - B. Sport, Personal details and Socializing.
 - C. Weather, Location and Q-Codes.
 - D. Religion, Business, Politics, Racial and Ethnic Slurs.

SECTION B

31. What is the voltage, for a circuit with a 4 Ohms resistor and current of 3 A?
- A. 7 V.
 - B. 1.33 V.
 - C. 0.75 V.
 - D. 12 V.
32. If ' λ ' is wavelength, ' c ' is speed of light and ' f ' is frequency, which formula listed below is correct?
- A. $\lambda = fc$.
 - B. $f = \lambda/c$.
 - C. $c = f^2\lambda$.
 - D. $c = f\lambda$.
33. What will be produced around the conductor when an electric current pass through a wire?
- A. Semi-conductor.
 - B. Electric field.
 - C. Magnetic field.
 - D. Force field.
34. Which instrument would you use to measure an electric current?
- A. Ammeter.
 - B. Thermometer.
 - C. Voltmeter.
 - D. Ohmmeter.
35. Which of the following components are used to make RF filters?
- A. Diode and Resistor.
 - B. Zener Diode and Zeti Diode.
 - C. Capacitor and LEDs.
 - D. Inductors and Capacitors.

36. To allow the bulb in the diagram to light correctly, a wire should be connected between points

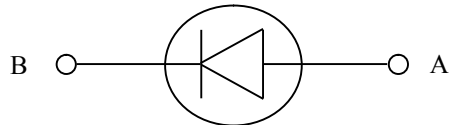


- A. 1 and 4.
- B. 1 and 2.
- C. 1 and 3.
- D. 3 and 4.

37. Which components can amplify a small signal using low voltages?

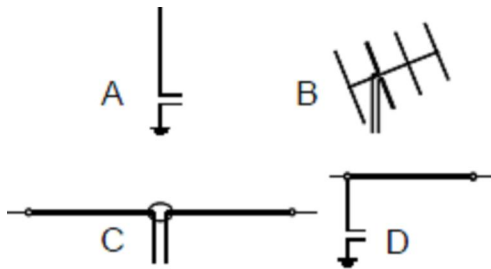
- A. PNP transistor.
- B. Transformer.
- C. Mega Cell Battery.
- D. Resistor.

38. In the diagram below, indicate the current flow in the semi-conductor diode.



- A. From A to B.
- B. From B to A.
- C. From A to B and B to A.
- D. None of the above.

39. Which drawing shows a dipole antenna?



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

40. What is the modulation used in “Very High Frequency” and “High Frequency” respectively?

- A. Single band and multiple band.
- B. Frequency modulation and amplitude modulation.
- C. Amplitude modulation and frequency modulation.
- D. Quadrature amplitude modulation and phase modulation.

41. Which one of the following is the correct application of the frequency 7040 kHz in amateur radio?

- A. Long distance communication i.e. Hawaii.
- B. Short distance communication i.e. Borneo Island.
- C. Repeaters.
- D. None of the above.

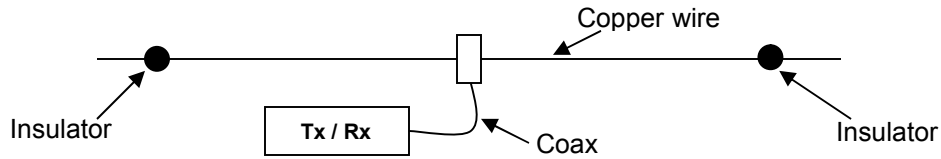
42. VHF and UHF signals can be obstructed by: Foreign

- A. Transmission during night time.
- B. Strong north winds.
- C. Transmission over water.
- D. Large obstacles.

43. Which of the following principles is used when working with almost any electronic circuit?
- A. Coulomb's Law.
 - B. Cole's Law.
 - C. Ohm's Law.
 - D. Tesla's Law.
44. Which of the following is true about Capacitor?
- A. It is an electrical device that resists the flow of current.
 - B. A device that only allows a current to flow in one direction in a circuit.
 - C. Stores energy and produces a mechanical force between the conductors.
 - D. Used for filtering and smoothing of signals and are the major components in transformers.
45. What is the unit prefixes for Giga, Kilo, Mega respectively?
- A. 10^9 , 10^6 , 10^3 .
 - B. 10^9 , 10^3 , 10^6 .
 - C. 10^6 , 10^3 , 10^9 .
 - D. 10^{-9} , 10^3 , 10^6 .
46. A power amplifier has a gain of 6dB. If you input 44W, the output would be?
- A. 7.3 W.
 - B. 176 W.
 - C. 0.103 W.
 - D. 58 W.
47. The frequency of a Variable Frequency Oscillator (VFO) is determined by
- A. the supply voltage.
 - B. the inductance and capacitance of the tuned circuit.
 - C. the type of transistor used.
 - D. the particular circuit udes.
48. What is the function of an antenna tuner?
- A. To improve power efficiency between transceiver and antenna by matching the impedance.
 - B. To tune the frequency.
 - C. To maintain power transmission at a safe level.
 - D. To provide excellent grounding to the equipment during lighting.

49. What is the advantage of using a trap dipole antenna over a usual dipole?
- A. It has more gain.
 - B. It operates on several bands.
 - C. It is a broadband antenna.
 - D. It is omni-directional.
50. A transformer is used to balance a transmission line of 4.0 Ohm with a 800 Ohm antenna. What is the ratio required for the transformer to do this?
- A. 1 : 200.
 - B. 1 : 804.
 - C. 1 : 3200.
 - D. 1 : 0.005.
51. Define the function of Low-pass filter and High-pass filter respectively?
- A. Restrict low frequency and restrict high frequency.
 - B. Channeling high frequency and channeling low frequency.
 - C. None of the above.
 - D. Restrict high frequency and restrict low frequency.
52. What is the velocity of an electro-magnetic wave?
- A. 200×10^6 metres/sec.
 - B. 300×10^6 metres/sec.
 - C. 0.3×10^8 metres/sec.
 - D. 3×10^{-8} metres/sec.
53. What is the advantage of a quarter-wave vertical ground-plane antenna for DX working on 21MHz?
- A. Small size.
 - B. All-round radiation.
 - C. Good matching to the feeder.
 - D. Low radiation angle.

54. Below is a diagram of a Half wavelength for a dipole antenna.



What is the length of the copper wire required for Half Wavelength dipole antenna for 20 meter on frequency 14250kHz?

- A. 16 ft 4 inch.
 - B. 17 ft 4 inch.
 - C. 21 ft 6 inch.
 - D. 15 ft 8 inch.
55. A standing wave meter (SWR) is used to check the:
- A. Height of the tower.
 - B. Efficiency of a transmitter.
 - C. Resonant frequency of an aerial.
 - D. Matching of the transmitter to the aerial system.
56. The main advantage of the yagi aerial as compared with dipole is:
- A. Smaller physical dimensions.
 - B. Increased forward gain.
 - C. A wider beam width.
 - D. A better match for the feeder.
57. What does Single-sideband modulation (SSB) means?
- A. It is a refinement of the technique of frequency modulation.
 - B. It is a refinement of the technique of amplitude modulation.
 - C. It is a form of digital modulation.
 - D. It is a spread spectrum modulation technique.

58. Groundwave is define 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.

59. A 50 hertz current in a wire means that:

- A. a cycle is completed 50 times in each second.
- B. a potential difference of 50 volts exists across the wire.
- C. the current flowing in the wire is 50 amperes.
- D. the power dissipated in the wire is 50 watts.

60. The acronym EMC stands for:

- A. Electric and Magnetic compatibility.
- B. Electromagnetic compatibility.
- C. Engineering Minimum compatibility.
- D. Electrical Maintenance compatibility.