

## SECTION A

*This section contains 30 questions. Answer all.*

1. According to the Telecommunication Order 2001, any person who establishes, installs, maintains, provides or operates a radio-communication service or any radio-communication equipment in any place or on board any vessel, aircraft or in any vehicle in Brunei Darussalam without a licence granted shall be guilty of an offence. Which of the statement below is CORRECT?
  - A. Any person guilty of an offence 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 offences shall be liable on conviction to a fine not exceeding \$10,000, imprisonment for a term not exceeding 3 years of both.
  - C. Any person guilty of an offence 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. In what Region and Zone is Brunei Darussalam located?
  - A. Region 3, Zone 28
  - B. Region 28, Zone 3
  - C. Region 38, Zone 2
  - D. Region 2, Zone 38
  
3. 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 Custom and Excise Officials and seek approval from AITI
  - B. Declare the equipment to the Royal Brunei Custom and Excise officials, seek approval from AITI and pay import tax for the equipment
  - C. Pay import tax for the equipment without seeking approval from AITI
  - D. Bring the equipment directly to AITI officials for approvals without having to pay for import tax.
  
4. What are the complete details inside the logbook for amateur radio operators everytime they are on air?
  - 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.

5. 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
  
6. Which of the statement below is CORRECT regarding installation of amateur radio equipment in a premise?
  - A. One unit of licensed radio equipment is only allowed for one premise unless stated otherwise in the license.
  - B. Radio equipment can be installed in any premise without any valid amateur radio license.
  - 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.
  
7. During your amateur radio conversation, what you should you do when you hear 'BREAK'?
  - A. Stop you conversation, release your frequency immediately and be on standby to assist if necessary.
  - B. Stop your conversation and turn off your equipment.
  - C. Keep on communicating and disregard the message.
  - D. Report this to AITI immediately for assistance..
  
8. Salleh and his son Elham is having an amateur radio conversation. Which set of conversations below should they avoid:
  - A. Religion, Business, Politics, Racial and Ethnic Slurs.
  - B. Hobbies, Education, and Entertainment.
  - C. Sport, Personal details and Socializing.
  - D. Weather, Location and Q-Codes.
  
9. A station 'Callsign' is sent for the purpose of identification at the start of transmission and end of transmission. It should...
  - A. Be mentioned once after the first 60 minutes
  - B. Be mentioned once after the first 15 minutes
  - C. Be repeated every 15 minutes
  - D. Be repeated every 60 minutes
  
10. What is required by AITI during random amateur radio inspections?
  - A. Station Log Book and a valid amateur radio licence
  - B. Station log book and a certificate from Radio Organisation
  - C. Station log book and a valid driving licence
  - D. A certificate from any Radio Organisation and a valid driving licence

11. 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
  
12. What is the 'Q' code for "Are you ready?" and "What is your location?"
  - A. QRV and QTH
  - B. QRV and QTA
  - C. QRB and QTH
  - D. QSA and QTB
  
13. What does 'CQ' and 'DX' stands for?
  - A. Calling all station and Wait
  - B. Calling all station and Distance foreign countries
  - C. Call quit/Closing down and Digital signal transmission
  - D. Station call interference and Distance foreign countries
  
14. 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
  
15. 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
  
16. To avoid a direction high gain antenna from directing its excess RF power to the people in nearby buildings, what must be done?
  - A. Place the antenna higher than surrounding buildings.
  - B. All equipment must be properly grounded.
  - C. Place the antenna lower or equal height to the surrounding buildings.
  - D. None of the above
  
17. 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
  
18. What is the meaning of the term half-duplex operation?
  - A. Transmitting and receiving on the same frequency
  - B. Transmitting and receiving over a wide area
  - C. Transmitting on one frequency and receiving on another
  - D. Transmitting one-way communications

19. 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 AITI declare a state of emergency.
  - C. The exchange of such information must be approved by a local emergency preparedness official.
  - D. None of the above.
20. 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
21. Where does a Brunei Darussalam Amateur Radio licence allow you to operate?
- A. From anywhere in the world
  - B. From wherever the Amateur Radio Service is regulated as stated in the licence issued
  - C. From a country that shares a third party agreement with Brunei Darussalam
  - D. Only from the mailing address printed on your license
22. What are the requirements for applying an Amateur Radio licence upgrade (ie. V89 – V85)?
- A. The licence holder must fill up the Amateur Radio Callsign Application form and submit a minimum six (6) month logbook.
  - B. Licence holder must hold a valid Amateur Radio licence for at least three (3) years
  - C. To purchase an amateur HF radio equipment before applying.
  - D. No further process required upon passing your amateur radio examination.
23. What type of interference may come from a multi-band antenna connected to a poorly tuned transmitter?
- A. Harmonic radiation
  - B. Auroral distortion
  - C. Parasitic excitation
  - D. Intermodulation noise
24. 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. 137.000 MHz – 156.000 MHz
  - C. 144.000 MHz – 148.000 MHz
  - D. 137.000 kHz – 148.000 kHz

25. An amateur radio licensee authorizes the holder to communicate with?
- A. other amateur radio operators and CB radio operators
  - B. other amateur radio operators
  - C. any two-way radio services on HF (3-30)
  - D. Land Mobile Services
26. A radio amateur's transmission is LEAST likely to cause interference to
- A. other amateurs
  - B. other radio users
  - C. an electric drill
  - D. An electronic security alarm.
27. 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
28. 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
29. Which of the following is NOT an offence against the Telecommunication Order 2001:
- A. Selling radio equipment without a licence
  - B. Operating unapproved equipment on an unlicensed band
  - C. Operating an approved equipment with an expired operating licence
  - D. Operating another operator's equipment where both are licensed
30. Amateur radio repeater frequencies in Brunei are assigned by
- A. Local amateur radio club
  - B. AITI
  - C. Ministry of Communication
  - D. International Amateur Radio Association

## SECTION B

This section contains 30 questions. Answer *all*.

31. 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
32. The relationships between, 'Voltage (V)', 'Resistor (R)' and 'Current (I)' is
- A.  $V = IR$
  - B.  $V = R/I$
  - C.  $V = IR^2$
  - D.  $V = I^2R$
33. Which instrument would you use to measure an electric current?
- A. Ammeter
  - B. Thermometer
  - C. Voltmeter
  - D. Ohmmeter
34. What is the symbol for capacitor
- A. 
  - B. 
  - C. 
  - D. 
35. The voltage through a 2 k $\Omega$  resistor is 10 V. What is the current across this resistor?
- A. 20 milliamps
  - B. 5 amps
  - C. 5 milliamps
  - D. 0.5 amps
36. 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
37. The wavelength of a signal in free space with a frequency of 100MHz is
- A. 3 meter
  - B. 30 meter
  - C. 3 millimeter
  - D. 3 cm

38. If ' $\lambda$ ' 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.  $c = f\lambda$

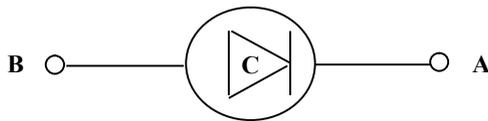
39. Which of the following of the components is used to make RF filters?

- A. Diode and Resistor
- B. Zener Diode and Zeti Diode
- C. Capacitor and LEDs
- D. Inductors and Capacitors

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

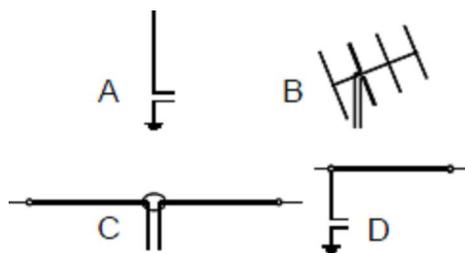
- A. PNP transistor
- B. Transformer
- C. Mega Cell Battery
- D. Resistor

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



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

42. Which drawing shows a dipole antenna?

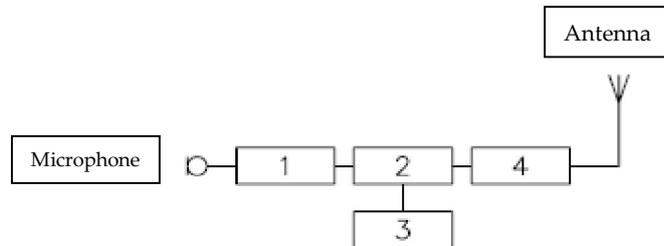


- A. Drawing A
- B. Drawing B
- C. Drawing C
- D. Drawing D

43. What are three good electrical conductors?

- A. Copper, gold, mica
- B. Gold, silver, wood
- C. Gold, silver, aluminum
- D. Copper, aluminum, paper

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

45. 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

46. 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

47. Process of modulation allows

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

48. Groundwave is define as:

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

49. The unit for capacitor is
- A. Farad
  - B. Ohm
  - C. Watt
  - D. Ampere
50. Radio Horizon is define as
- A. The line of sight between two transmissions
  - B. The communications done in coastal areas
  - C. The point where radio signals between two points are blocked by the curvature of the Earth
  - D. The communications to the space-station during ideal weather condition
51. The frequency band '3 MHz – 30 MHz ' is categorised under?
- A. Very high frequency
  - B. High frequency
  - C. Ultra high frequency
  - D. Low frequency
52. 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
53. In a piece of wire the electrons move backwards and forwards when it is connected to
- A. an AC supply
  - B. a battery
  - C. an LED
  - D. a filament lamp
54. What is the most serious risk when working inside equipment using high voltages?
- A. Such equipment are more likely to develop a fault.
  - B. Spare parts are harder to obtain.
  - C. High voltage equipment are more complicated and harder to repair.
  - D. There is a risk of receiving a fatal electric shock.
55. The output from the transmitter should be connected to the antenna by
- A. waterproof mains cable
  - B. screened audio cable
  - C. fuse wire
  - D. coaxial cable
56. Define the function of a Low-Pass filter?
- A. Restrict high frequency and restrict low frequency
  - B. Restrict low frequency only
  - C. Channeling high frequency and channeling low frequency
  - D. Restrict high frequency only

57. What is the meter band for the frequency 3.50-3.90MHz?
- 80 meters
  - 80 cm
  - 30 meters
  - 30 cm
58. What is the difference between an ordinary amplitude modulated signal and a single-sideband signal?
- single-sideband signal occupies a wider bandwidth
  - single-sideband signal is distorted
  - single-sideband signal occupies half the bandwidth
  - single-sideband signal is easier to tune in
59. The acronym EMC stands for:
- Electric and Magnetic compatibility
  - Electromagnetic compatibility
  - Engineering Minimum compatibility
  - Electrical Maintenance compatibility
60. AITI implemented an online service ([online.aiti.gov.bn](http://online.aiti.gov.bn)) for licence applications since 30<sup>th</sup> May 2017. What is the main function of the highlighted box?
- Applying for radio amateur licence
  - Applying for apparatus licence
  - To complain interference
  - Applying for job vacancy in AITI.

