SART

1. Please write the acronym SART in full.

2. How can the SART's audible tone monitor be used?

a) It informs survivors that assistance may be nearby.
b) It informs survivors when the battery's charge condition has weakened.
c) It informs survivors when the SART switches off
d) It informs survivors that a nearly vessel is signalling on DSC.

3. How many pieces of SART must a ship of 5000 tons gross tonnage be provided with?

a) 1
b) 2
c) 3
d) 6

4. In which frequency band does a search and rescue transponder operate?

a) 3 GHz.
b) 9 GHz
c) S-band
d) 406 MHz.

5. At what point does a SART begin transmitting?

a) It immediately begins emission when placed in the "on" position.
b) It must be manually activated.
c) If it has been placed in the "on" position, it will respond when it has been interrogated by a 9-GHz radar signal.
d) If it has been placed in the "on" position, it will begin transmitting immediately upon detecting that it is in water.

6. How can rescue personnel detect that a SART is transmitting in the immediate vicinity?

a) The SART's blips on the PPI will begin arching and eventually become concentric circles.
b) The DSC unit will react to the SART's signal and respond with the two-tone autoalarm.
c) The SART can provide an approximate location to within a two nautical mile radius, per IMO standards.
d) The SART signal appears as a target which comes and goes; the effect of heavy swells on a SART.

7. How can a SART's effective range be maximized?

a) The SART should be placed in water immediately upon activation.
b) The SART should be held as high as possible.
c) Switch the SART to the "high" power position.
d) If possible, the SART should be mounted horizontally so that its signal matches that of the searching radar signal.

8. What is the required number of hours that a SART's battery must be able to operate in the standby mode?

a) Eight (8) hours.
b) Three (3) days.
c) Four (4) days.
d) Forty-eight (48) hours.

9.What conditions will normally cause a SART to operate in the active mode?

a) It will respond only to interrogation by 9-GHz radar signals.
b) A SART will normally respond to interrogation from a searching vessel's radar if the radar antenna is at least 15 meters high.
c) A SART will normally respond to interrogation from a searching aircraft's radar if the radar's output power is at least 10,000 watts and the aircraft is at a height of 3000 feet and within 30 nautical miles.
d) All of the above

10. Which one of the following statements concerning vessels that are required to carry only one SART is true?

a) Vessels between 300-500 gross tons are only required to have one SART.
b) This unit should be secured in a cabinet below deck until needed.
c) Passenger vessels are only required to have one SART.
d) If the vessel is more than 500 gross tons, the SART must be kept with the EPIRB for rapid deployment

11. How many pieces of SART must a ship of 400 tons gross tonnage be provided with?

a) 1 **c)** 3
b) 2 **d)** 6

12. Which one of the following equipment does not transmit locating signals?

a) SARTs. **c)** Category I EPIRBs.
b) Survival craft VHF transceivers. **d)** 406 MHz EPIRBs.

13. In which frequency band does a search and rescue transponder operate?

a) 3 GHz. **c)** CH70.
b) 9 GHz. **d)** 406 MHz.

14. Which shipboard equipment will detect a signal from a SART?

a) 3 sm Radar. **c)** 10 sm Radar.
b) A DSC receiver. **d)** The Autoalarm

15. What does a SART signal sound or look like?

a) It transmits "SOS" and the vessel's name and position in slow speed Morse Code.
b) It will appear on a radar unit's PPI as a line of dots radiating outward with the innermost dot indicating the SART's position.
c) It will appear on a radar unit's PPI as a line of dots radiating outward with the outermost dot indicating the SART's position.
d) None of the above.

16. Which one of the following would most likely prevent a SART's signal from being detected?

a) Signal absorption by the ionosphere.
b) Heavy sea swells.
c) The rescue personnel were monitoring the 10-cm radar.
d) The rescue personnel were monitoring the 3-cm radar.

17. Which one of the following statements concerning SARTs is false?

a) Its battery must be capable of operating the SART in the standby mode for at least 96 hours.
b) Its signal is transmitted with vertical polarization to match that of the searching radar equipment.
c) A SART will respond to an interrogating radar signal even under heavy swell conditions.
d) A SART provides a visual or audible signal that informs survivors that assistance may be nearby.

18. Which one of the following equipment is the primary source of generating a locating signal?

a) DSC only
b) DSC and EPIRB.
c) SART and DSC.
d) EPIRB and SART.

.

19. Which one of the following statements concerning testing and maintenance of SARTs is true?

a) An at-sea GMDSS maintainer is not able to test a SART as it is hermetically sealed.
b) Testing a SART should be performed only in controlled environment as a test signal may be misinterpreted as a genuine distress situation.
c) A SART's battery must be replaced within ninety (90) days after the expiration date imprinted on the unit.
d) All of the above.

20. Why should SART testing and maintenance be kept to a minimum?

a) A test signal may interfere with proper and safe navigation.
b) Testing the SART places an inordinate drain on its battery.
c) Possibility of misinterpretation as a genuine distress situation.
d) All of the above.

21. Which one of the following items is not the responsibility of the GMDSS Radio Operator?

a) Inspecting and cleaning the SART's container, and clearing the immediate storage area of any debris or obstacles.
b) Measuring the SART's transmitted frequency.
c) Placing the SART in the test mode and verifying that the nearby PPI shows concentric circles.
d) Ensuring the SART’s batteries are replaced before their expiration date.

22. Which one of the following would not be a normal function when testing or performing maintenance on a SART?

a) The GMDSS Radio Operator may conduct 9-GHz voice communications with nearby vessels to coordinate SART testing.
b) The GMDSS Radio Operator should inspect the SART's container for apparent damage.
c) The GMDSS Radio Operator should inspect the battery's expiration.
d) The GMDSS Radio Operator should conduct a brief test using the vessel's radar.

23. Why is it important to limit the duration of testing a SART?

a) Excessive testing causes "burn in" on the vessel's radar PPI.
b) Testing a SART should be performed only in controlled environment as a test signal may be misinterpreted as a genuine distress situation.
c) To prevent overheating, a SART requires sufficient ventilation which is significantly reduced when the SART is being tested.
d) If another SART is testing at the same time, the two signals will cause damage to the unit that transmitted them.

EPIRB

1. Please write the acronym EPIRB in full.

2.What types of EPIRBs can be used in sea area A3?

a) Cospas/Sarsat or Inmarsat-E or VHF
b) Inmarsat-E only
c) Inmarsat-E or Cospas/Sarsat
d) Cospas/Sarsat only

3.What are homing signals?

a) Locating signals which are transmitted by mobile units in distress, or by survival craft
b) Transmission of navigational warnings, weather warnings and urgent messages
c) Ship to ship radio traffic regarding the safety of navigation
d) Traffic to support the search and rescue operations**.**

4. What types of EPIRB`s can be used in sea area A4?

a) Cospas/Sarsat or Inmarsat-E or VHF
b) Inmarsat-E only
c) Inmarsat-E or Cospas/Sarsat
d) Cospas/Sarsat only

5. Which one of the following satellite systems is of particular importance to search and rescue missions under GMDSS?

a) COSPAS/SARSAT
b) AMSAT
c) NASA/Arienne
d) COMSAT.17

6. Which one of the following statements concerning COSPAS-SARSAT is true?

a) EPIRBs are units that are used as alerting devices.
b) There are satellites in a low-earth polar orbit that detect EPIRB beacons on 406 MHz and relay the information to an earth-side Local User Terminal (LUT).
c) The Doppler frequency measurement concept is used to determine the EPIRB's location.
d) All of the above.

7. Which VHF channel does the VHF emergency beacon use?

a) 13 **c)** 16
b) 70 **d)** 6

8. Which one of the following would best be used for visual detection of a survival craft?

a) A 9-GHz SART's beacon.
b) An EPIRB's strobe light.
c) A 121.5-MHz EPIRB beacon.
d) A406-MHz EPIRB beacon.

9. Which one of the following statements concerning INMARSAT-E is true?

a) EPIRBs are units that are used as alerting devices.

b) There are satellites in a low-earth polar orbit that detect EPIRB beacons on 406 MHz and relay the information to an earth-side Local User Terminal (LUT).
c) The Doppler frequency measurement concept is used to determine the EPIRB's location.
d) All of the above.

10. In the GMDSS, for which purposes is the frequency band 406-406.1MHz used?

a) For handling of distress traffic by aeronautical radio stations
b) For radio traffic regarding the safety of navigation exclusively
c) For satellite emergency position-indicating beacons exclusively
d) For distress and safety traffic in radio telephony

11. Which piece of required GMDSS equipment is the primary source of ransmitting locating signals?

a) Radio Direction Finder (RDF).
b) An EPIRB transmitting on 406 MHz.
c) Survival Craft Transceiver.
d) A SART transmitting on 406 MHz.

12. Which EPIRB transmits a distress alert that is received and relayed by an INMARSAT satellite?

a) Class A EPIRBs.
b) Class B EPIRBs.
c) L-band EPIRBs.
d) Category I EPIRBs.

13. Which one of the following statements concerning COSPAS-SARSAT is false?

a) EPIRBs are used primarily for distress alerting.
b) These satellites are looking specifically for EPIRB signals on 406 MHz.
c) These satellites use Doppler shift measurement to determine the location of the beacons.
d) After initiating a call request and selecting the CES, these satellites may be used for commercial messages.

14. Which of the following EPIRBs is most likely to transmit a distress alert signal?

a) 9 Ghz EPIRBs. **c)** CH16 EPIRBs.
b) 406 MHz EPIRBs. **d)** 121.5/243 MHz EPIRBs.

15. Which one of the following is normally found on EPIRBs that are detected by satellites?

a) A strobe light.
b) A 5-watt 406-MHz beacon.
c) A bracket designed to allow the EPIRB to automatically float-free.
d) All of the above.

16. Which one of the following statements concerning satellite EPIRBs is true?

a) Once activated, these EPIRBs continuously send up a signal for use in identifying the vessel and for determining the position of the beacon.
b) The coded signal identifies the nature of the distress situation.
c) The coded signal only identifies the vessel's name and port of registry.
d) If the GMDSS Radio Operator does not program the EPIRB, it will transmit faulty information such as the follow-on communications frequency and mode.

INMARSAT

1. Please write the acronym SES in full.

2. INMARSAT-C Land Earth Stations can deliver messages via facsimile, telex and e-mail systems.

a) TRUE **c)** Only INMARSAT-A/B
b) FALSE **d)** I DON'T KNOW

3. Which one of the following INMARSAT services provides communications by telephone, telex, facsimile (fax), and data?

a) INMARSAT-A/B. **c)** SafetyNET.
b) INMARSAT-C. **d)** VHF-FM.

4.How many GMDSS sea areas are there in the world where you can use Inmarsat station ?

a) 4 **c)** 2
b) 3 **d)** 16

5. Which satellite system supports both ship-to-shore and shore-to-ship facsimile (fax) communications?

a) INMARSAT-A/B. **c)** COSPAS-SARSAT.
b) INMARSAT-C. **d)** INMARSAT-E.

6. What is the service code for requesting automatic (unattended) service through INMARSAT-A/B?

a) It depends on which carrier will be used for routing the call.
b) 11#.
c) 01.
d) 00.

7. Which address must you type to send message from your Inmarsat-C terminal to the hospital?

a) Telex ocean region access code + IMN
b) Special code 38
c) Any address with distress priority
d) Special code 32

8. What is meant by an INMARSAT satellite's "elevation"?

a) The angle of the satellite to the equator.
b) The satellite height above the horizon as seen from the ship.
c) The relative bearing of the satellite to the vessel's course.
d) The height of the antenna above the main deck.

9. 1 kbit = ...

a) 256 bit
b) 1000 bit
c) 1024 bit
d) 100 bit

10. Which one of the following statements concerning INMARSAT-C is true?

a) Telex communications are established in the ARQ mode.
b) Telex communications are conducted with real-time connectivity.
c) Telex communications are less expensive than voice communications.
d) Telex communications are delivered on a store-and-forward basis.

11. Which key must be used to signal the end of a manually-dialed number in a telephone call made via INMARSAT-A?

a) The colon (":") key.
b) The "ENTER" key.
c) The plus ("+") key.
d) The pound ("#") key

12. Which key must be used to signal the end of a manually-dialed number in a telex via sent via INMARSAT-A?

a) The colon (":") key.
b) The "ENTER" key.
c) The plus ("+") key.
d) The pound ("#") key.

13. How is maximum coverage provided by satellites in the GMDSS?

a) There are four satellites in polar orbit.
b) There are four satellites in geostationary orbit.
c) Each service (INMARSAT-A, -B, -C, and -M) has four satellites in orbit.
d) GMDSS optimizes coordinated use of COSPAS-SARSAT satellites.

14. What priority code is associated with routine calls made via INMARSAT-A?

a) 0. **c)** 2.
b) 1. **d)** 3.

15. Which telephone services are available through INMARSAT-A?

a) Person-to-person calls. **c)** Credit card calls.
b) Collect calls. **d)** All of these

16. What is an INMARSAT "Subscriber Number"?

a) This identifies the vessel's selective calling (selcall) number.
b) This is the INMARSAT number that is assigned to a unit for incoming calls.
c) This is the vessel's INMARSAT registration number for accounting authority purposes.
d) This number is used for receiving news and other optional services in FleetNET.

17. What do the characters "GA+" mean when they appear in a telex communications sent by INMARSAT-A?

a) "Global Accounting". **c)** "General Advisory".

b) "Go ahead". **d)** This abbreviation has no meaning to a telex call as the plus ("+") sign is used only in conjunction with voice calls.

18. Which one of the following calls via INMARSAT-A will be the least expensive?

a) All INMARSAT-A calls are made at uniform rates, regardless of mode.
b) Voice calls placed from one ship to another ship.
c) Telex calls placed from a ship to a shore-based location.
d) Telex calls placed from one ship to another ship.

19. Which one of the following calls via INMARSAT-A will be the most expensive?

a) All INMARSAT-A calls are made at uniform rates, regardless of mode.
b) Voice calls placed from one ship to another ship.
c) Telex calls placed from a ship to a shore-based location.
d) Telex calls placed from one ship to another ship.

20. What is meant by "CES"?

a) Coast Earth Satellite. **c)** Central Equatorial Station.
b) Coast Earth Station. **d)** Coastal Equivalent Station.

21. What is meant by "AOR"?

a) Atlantic Operations **c)** Actual Ocean Region.
b) Atlantic Ocean Region. **d)** Actual Operator Response..29

22. What will most likely happen if a satellite's elevation becomes very low?

a) Changes in the elevation have no effect on communications.
b) Communications range through the satellite will likely be maximized.
c) Communications through the satellite will likely become difficult or impossible to establish.
d) This indicates that the vessel should effect a course change to minimize shadowing.

23. What dialing sequence must be entered to request Operator Assistance by telex through INMARSAT-A?

a) Operator assistance is not available through INMARSAT-A, but is available through INMARSAT-C.

b) 11#. **c)** 01#. **d)** 11+.

24. What is the purpose of including a string of five periods (". . . . .") in an INMARSAT-A telex message?

a) This is an ellipse that is used to signify that certain redundant text has been deleted
b) This instructs the coast earth station to automatically disconnect the telex connection and sever the satellite communications.
c) A string of five periods will not affect an INMARSAT-A telex transmission.
d) This instructs the coast earth station to automatically disconnect the telex connection and keep the shipboard unit in communications with the satellite.

25. Which one of the following equipment is intended to be interfaced with an INMARSAT-A unit?

a) On-board personal computer.
b) Digital Selective Calling controller.
c) Autoalarm generator.
d) Shipwide signal distribution panel.

26. What dialing sequence must be entered to request Operator Assistance by voice through INMARSAT-A?

a) Operator assistance is not available through INMARSAT-A, but is available through INMARSAT-C.

b) 11#. **c)** 01#. **d)** 11+.

27. How are charges determined for a ship-to-ship facsimile communication by INMARSAT-A?

a) Fax rates are about one-half that of ship-to-ship voice communications.
b) Fax rates are about twice that of ship-to-ship voice communications.
c) Fax rates are about the same as for ship-to-ship voice communications.
d) Fax communications are not possible through INMARSAT-A.

28. How are charges calculated for a ship-to-ship telex message sent by INMARSAT-C?

a) Charges begin when the vessel being called responds with its answerback.
b) Charges are determined by the size of the telex message.
c) Charges for a telex call are about one half that of a voice call.
d) Charges for all calls are the same, regardless of their mode.

29. How are charges determined for a ship-to-ship voice communication by INMARSAT-C?

a) Voice communication rates for ship-to-ship calls through INMARSAT-C are about twice those for ship-to shore INMARSAT-C calls.
b) Voice communication rates through INMARSAT-C are about half that for voice communications through INMARSAT-A.
c) Voice communication rates are determined by the length of the call through INMARSAT-C.
d) Voice communications are not possible through INMARSAT-C.

30. Which one of the following statements concerning INMARSAT service rates is true?

a) Charges for a voice call placed through INMARSAT-C begin to accrue when the number being called is answered.
b) Charges for a voice call placed through INMARSAT-A begin to accrue when the message reference number is received from the coast earth station.
c) Charges for a voice call placed through INMARSAT-A begin to accrue when the number being called is answered.
d) Charges for a voice call placed through INMARSAT-A begin to accrue when the coast earth station acknowledges the call.

31. Which one of the following statements concerning INMARSAT-C is true?

a) Voice calls through INMARSAT-C are more expensive than telex calls through the same system.
b) A vessel may send and receive fax messages through INMARSAT-C.
c) A vessel can establish voice communications through INMARSAT-C on a dedicated channel.
d) Telex messages can be sent or received through INMARSAT-C.

32. Which one of the following statements concerning INMARSAT-C is true?

a) Telex communications are conducted with real-time connectivity.
b) Two-way real-time telex communications can exist with prior arrangement.
c) Telex messages are delivered on a store-and-forward basis.
d) Fax messages can be both sent and received through INMARSAT-C.

33. Which one of the following best describes a shipboard INMARSAT-C system?

a) A satellite communications system that provides real-time connectivity.
b) A small, lightweight terminal capable of providing satellite store-and-forward message communications.
c) A small, lightweight terminal used to transmit messages over high frequency (HF) bands to communicate through a satellite.
d) A satellite communications system that also provides continuous Digital Selective Calling coverage for all ocean regions.

34. Which action must be taken to ensure that incoming message traffic of all priority levels will be received through INMARSAT-C?

a) The system needs only to be commissioned and switch on.
b) No additional action is necessary after turning on the receiver and aiming the antenna at the desired satellite.
c) The GMDSS Radio Operator must log on to the desired satellite.
d) The GMDSS Radio Operator must log on to the desired satellite and receive the message reference number (MRN) from the CES.

35. Which one of the following actions should be taken once the vessel is berthed and will not leave port again for several weeks?

a) The GMDSS Radio Operator must notify the NCS that the vessel will be off-line, and wait for the NCS to acknowledge with a confirmation number that must be logged.
b) The INMARSAT-C system can be powered down without taking additional steps once the GMDSS Radio Operator has ensured that all incoming SafetyNET messages have been received and stored.
c) The GMDSS Radio Operator must log off of the INMARSAT system.
d) The GMDSS Radio Operator must transmit an all-ships alert to notify all vessels within the satellite's footprint that the vessel will be off-line.

36. What is the average length of time required for a telex sent by INMARSAT-C to be delivered to the addressee?

a) All INMARSAT-C communications are made with real-time connectivity so there is no delay in message delivery.
b) The average delivery time for a telex sent by INMARSAT-C is about 10 minutes.
c) Date/time notification of delivery is possible only through INMARSAT-A.
d) The average delivery time for a telex sent by INMARSAT-C is about 10 minutes,but fax and data messages sent by INMARSAT-C require about 30 minutes for delivery.

37. How are telex messages sent by INMARSAT-C delivered?

a) They are delivered on a store-and-forward basis.
b) Most are delivered on a store-and-forward basis, but can be delivered in real-time that will be more expensive.
c) They are delivered with no time delay if both the sending and receiving parties are using the same satellite.
d) Delivery time is enhanced when the station sending the telex detects a low (minimal) satellite elevation.

38. What comprises an INMARSAT-C subscriber number?

a) Seven digits, beginning with a one (1).
b) Nine digits, beginning with a three (3).
c) Nine digits, beginning with a four (4).
d) Nine digits, beginning with the country code associated with the country in which the vessel is registered.

39. Which one of the following two-way modes of communications are available when using INMARSAT-C?

a) Telex.
b) Fax.
c) 14400 BPS Data.
d) Voice.

40. How is a distress message normally initiated through INMARSAT?

a) All INMARSAT units have a dedicated key that can be pressed for immediate action.
b) By adding the word "DISTRESS" in the first line of the message's preamble.
c) Certain INMARSAT units have a dedicated key that can be pressed for Immediate action, while other systems provide menu-driven features.
d) By transmitting the distress message on the U.S. Coast Guard's dedicated monitoring channel.

41. Which one of the following statements concerning geostationary satellites is true?

a) They are in a low-earth polar orbit to provide true global coverage.
b) They are in an equatorial orbit to provide true global coverage.
c) They provide coverage to vessels in nearly all of the world's navigable waters.
d) Vessels sailing in equatorial waters are able to use only one satellite whereas other vessels are able to choose between at least two satellites.

44. Which one of the following statements concerning INMARSAT-A is false?

a) Communications require a highly focused, directional antenna.
b) All modes, including data communications, are possible.
c) Standard-A service is available through all INMARSAT satellites.
d) True global coverage is available.

NAVTEX

1. What international direct-printing service promulgates MSI in English with an intended coastal water range of 200-400 miles (320-640 km)?

a) NAVAREA broadcasts.
b) NOAA weather broadcast.
c) HF facsimile.
d) NAVTEX.

2. Which media are used to receive MSI?

a) NAVTEX.
b) SafetyNET.
c) HF NBDP.
d) All of these

3. How many NAVAREAS are there in the world ?

a) 4 **c)** 16
b) 14 **d)** 24

4. How can MSI be received if your NAVTEX receiver becomes inoperative or your vessel is out of reception range of a NAVTEX transmitting station?

a) MSI can be requested by sending a telex to the Coast Guard via INMARSAT.
b) MSI broadcasts are received also by INMARSAT SafetyNET, SITOR broadcasts on HF, or by tuning an HF SITOR receiver to 518 kHz.
c) NAVTEX's alternate HF frequency of 8414.5 kHz is usually an adequate substitute.
d) Reception of MSI is not necessary only if, in the master's prudent judgement, the safety of the vessel, its crew, or that of other vessels will not be jeopardized.

5. How is a NAVTEX receiver programmed to reject certain messages?

a) The transmitting station's two-digit identification can be entered to de-select reception of its broadcasts.
b) By selecting a message category's single letter (A-Z) identifier.
c) By entering the selcall of the transmitting station.
d) By pressing "00" in the transmitter's ID block.

6. Which one of the following message categories cannot be disabled by the GMDSS Radio Operator?

a) Navigational warnings. **c)** Search and Rescue information.
b) Meteorological **d)** All of these.

7. What does a NAVTEX receiver do when it runs out of paper?

a) The unit cannot operate, and all subsequent MSI broadcasts are missed until the paper is replaced.
b) It will give off either an audible and/or visual alarm.
c) The system will automatically change from receiving MSI by NAVTEX to receiving it by SafetyNET so that no messages will be lost.
d) All of these.

8. Which one of the following is the primary frequency that is used exclusively for NAVTEX broadcasts internationally?

a) VHF channel 16 when the vessel is sailing in Sea Area A1, and 2187.5 kHz when in Sea Area A2
b) 2187.5 kHz. **c)** 4209.5 kHz. **d)** 518 kHz.

9. What NAVTEX message category indicates two-digits number “00” ?

a) Message will be repeated. **c)** Search and Rescue information.
b) Hazard navigational warning **d)** All of these.

10. Which one of the following NAVTEX questions is false?

a) NAVTEX is a single frequency SITOR system that transmits FEC broadcasts on 518 kHz.
b) A selective message-rejection feature of the receiver allows the mariner to receive only that safety information pertinent to his requirements.
c) NAVTEX is broadcast only in the local language of the coast station and adjacent NAVAREAs.
d) NAVTEX carries information relevant to all sizes and types of vessels within a region established for this service.

11. How is mutual interference among NAVTEX stations avoided?

a) Stations are limited to daytime operation only.
b) Transmitter power is limited to that necessary for coverage of assigned area.
c) Transmissions by stations in each NAVAREA are arranged in a time-sharing basis.
d) Both b and c.

12. How can reception of certain NAVTEX broadcasts be prevented?

a) Stations are limited to daytime operation only.
b) The receiver can be programmed to reject certain stations and message categories.
c) Coordinating reception with published broadcast schedules.
d) Automatic receiver desensitization during night hours.

13. What should a GMDSS Radio Operator do if a NAVTEX warning message is received but it contains too many errors for it to be usable?

a) Vital messages will be repeated.
b) Contact the NAVAREA coordinator and request a repeat broadcast.
c) The hurricane will be upon the vessel; they're in big trouble.
d) Listen to appropriate VHF weather channel for repeat warnings.

14. Which one of the following functions is not the responsibility of a GMDSS Radio Operator?

a) Replacement of the processor.
b) Replacement of fuses.
c) Self-diagnostic processor and printer tests.
d) Erasing stored message IDs.

15. Which one of the following statements is true?

a) The GMDSS Radio Operator can program the NAVTEX receiver to automatically reject any category of messages under the master's authority.
b) The GMDSS Radio Operator can program the NAVTEX receiver to reject all messages except navigation warnings, meteorological warnings, and search and rescue information.
c) The GMDSS Radio Operator can select the "None" option in the message category menu.
d) Upon entering a new NAVTEX station's broadcast range, the GMDSS Radio Operators enters the station's selcall number.

SAFETY NET / HF MSI

1. Please write the acronym EGC in full.

2. How are Enhanced Group Calls transmitted?

a) By COSPAS satellite.
c) By NAVTEX shore stations.
b) By HF SITOR shore stations and INMARSAT satellite.
d) By INMARSAT satellite.

3. Where NAVTEX cannot be feasibly established, what system can be implemented to provide an automated service in coastal waters to receive MSI?

a) SafetyNET.
c) VHF DSC.
b) AMVER.
d) HF MSI

4. What type of information does SafetyNET promulgate ?

a) MSI.
c) USCG advisories.
b) Traffic Lists.
d) MARAD.

5. What action should a GMDSS Radio Operator take when SafetyNET distress or urgency messages are received by the vessel's EGC receiver?

a) Aural and visual alarms are activated, and require manual deactivation by operator.
b) No immediate action is required by the operator since the transmission will be automatically acknowledged by the receiving vessel.
c) A periodic alarm tone will be heard until the radio operator prints the message from the unit's memory.
d) All of these.

6. What additional equipment provides the maximum availability for receiving MSI broadcasts when the associated INMARSAT-C is being used for telex communications?

a) An integrated ECG processor with the existing Standard-C equipment.
b) A separate EGC receiver.
c) HF SSB can be used to receive voice MSI broadcasts.
d) Automatic switching between INMARSAT-C and EGC functions.

7. An automated system that is capable of addressing messages to ships in pre-determined groups or to all ships in both fixed and variable geographic areas is known as what?

a) NAVTEX.
c) AFRTS.
b) EGC.
d) NAVAREAs.

8. What frequencies are used for receiving HF MSI?

a) HF MSI is transmitted on a primary frequency of 518 kHz and on a secondary frequency of 490 kHz.
b) HF MSI is transmitted on 8414.5 kHz plus one other (undesignated) HF frequency.
c) HF MSI is transmitted on the third ITU channel in each HF band (4, 6, 8, 12, 16 and 22 MHz).
d) HF MSI is transmitted on certain dedicated frequencies.

9. Which is the following HF frequencies is internationally allocated for use for transmitting NAVTEX-type broadcasts?

a) 4209.5 kHz using FEC mode.
b) 4209.5 kHz using ARQ mode.
c) 8414.5 kHz plus one other.
d) NAVTEX-type broadcasts are not transmitted on any HF frequency.

10. What system may be useful for messages, such as local storm warnings or a shore-to-ship distress alert, for which it is inappropriate to alert all ships in the satellite coverage area?

a) NAVTEX. **c)** AMVER.
b) EGC. **d)** DSC..

11. What kind(s) of broadcasts are available through SafetyNET?

a) MSI and messages to pre-defined groups of subscribers.
b) MSI and vessel traffic lists.
c) Hourly NOAA weather broadcasts from the NWS.
d) Coastal weather broadcasts.

12. What is the purpose of Maritime Safety Information broadcasts?

a) To provide hourly NOAA weather broadcasts from the NWS.
b) To provide U.S. Coast Guard Group broadcasts.
c) To maximize reception of mobile distress alerts, weather forecasts, coastal warnings and similar information.
d) To allow the transmission of messages to pre-defined groups of subscribers.

13. Which satellite system promulgates Maritime Safety Information?

a) AMVER. **c)** NAVTEX.
b) SafetyNET. **d)** INMARSAT-M SES.

14. EGC has to do with:

a) VHF **c)** INMARSAT
b) MF/HF **d)** NBDP

HF NBDP

1.Please write the acronym NBDP in full.

2. In which mode should urgency communication "to all stations" by direct-printing telegraphy normally be established?

a) FEC mode at a good propagation only possible
b) ARQ mode.
c) FEC mode
d) FEC mode; the ARQ mode may also be used

3. Which of the following defines "ITU Channel 1216"?

a) Channel 12 in the 16 MHz band.
b) Channel 16 in the 12 MHz band.
c) Channel 1216 in the MF band.
d) This would indicate the 16th channel in the 12 MHz band, but channel 1216 does not yet exist as there are currently only 15 possible channels.

4. Which of the following is a valid 22-MHz ITU Channel?

a) VHF channel 22.
b) HF channel 2206.
c) Channel 22A when used for VTS communications.
d) Frequency 2206 KHz.

5. Which of the following would be a valid selcall for use in ARQ communications?

a) 1106.
b) 212420 WHAQ X.
c) Four marks (ones) and three spaces (zeroes) forming the binary signal "1001101"
d) 1701576.

6. Which of the following keystrokes or characters is sent as part of ARQ communications to signal the end of the text of a chargeable message?

a) Four "N"s, i.e. "NNNN".
b) Four "K"s, i.e. "KKKK".
c) "BRK+".
d) Five periods (". . . . .").

7. Which one of the following keystrokes or characters is sent as part of ARQ communications to switch information transmission control from one station to the other?

a) The plus and question mark keys (“Over”)
b) The go-ahead ("GA") command.
c) The "ENTER" key.
d) The "END" key.

8. Which one of the following keystrokes or characters follows most commands in an ARQ communications?

a) The plus ("+") key.
b) The go-ahead ("GA") command.
c) The "ENTER" key.
d) The "END" key.

9. Which transmissions are permitted on the frequency 2174.5 kHz?

a) Distress and safety traffic using narrow-band direct-printing telegraphy exclusively
b) Transmissions of information regarding the safety of navigation and weather warnings
c) Distress and safety traffic in radiotelephony
d) Transmissions of the international NAVTEX system

10. Which one of the following keystrokes or characters is sent as part of ARQ communications to end the radio link?

a) Four "N"s , i.e. "NNNN".
b) Four "K"s, i.e. "KKKK".
c) "BRK+".
d) Five periods (". . . . .").

11. What is the usual purpose of pairing frequencies together in duplex communications?

a) These are normally used for FEC communications with coast radio stations.
b) These are normally used for ARQ communications with coast radio stations.
c) These are normally used only for distress communications to limit channel interference.
d) These are normally used for DSC communications with coast radio stations.

12. What is meant by the abbreviation ATOR?

a) Automatic Telex Over Radio.
b) AMVER Transmittals Over Radio.
c) Amateur Telex Over Radio.
d) None of the above.

13. Which one of the following statements concerning SITOR communications is true?

a) In ARQ, each character is transmitted twice, about 250 milliseconds apart.
b) In ARQ, the "information sending station" transmits a block of three characters twice, about 250 milliseconds apart.
c) In ARQ, the "information sending station" will transmit a block of three characters that the receiving station will subsequently acknowledge or request be retransmitted.
d) SITOR communications can be used to contact a NAVTEX transmitting station when requesting a repeat transmission of a missed NAVTEX message.

14. Once ARQ communications with the coast radio station has been established, which of the following exchanges will most likely take place?

a) The vessel then requests the coast radio station's selcall so that communications can be set up on the appropriate working channel.
b) Since communications have already shifted to the working channel, the vessel then transmits the subscriber number and text of the message to be sent for the coast radio station to store and forward.
c) After exchanging answerbacks with the vessel, the coast radio station transmits "GA+".
d) None of the above.

15. Which one of the following keystrokes or characters is sent as part of ARQ communications to initiate the transmission of a direct telex call?

a) "MSG+". **c)** "ENTER".
b) "GA+". **d)** "DIRTLX"..

16. What is meant by the term "ITU channel"?

a) This refers to a vessel's selcall number.
b) This refers to an internationally standardized assignment of frequency pairings for common use.
c) This refers to VHF channels 1-28 and 60-88.
d) None of the above.

17. What term is used to refer to a station that initiates a SITOR communications with another station?

a) Information Sending Station.
b) Master Station.
c) Broadcasting Station.
d) Information Transmitting Station.

18. FEC is used in connection with:

a) Telex **c)** DSC
b) Inmarsat **d)** Radiotelephone

19. NBDP is not used on:

a) VHF **c)** HF
b) MF **d)** DSC

D S C

1. Please write the acronym DSC in full.

2. What is defined as the area within the radiotelephone coverage area of at least one VHF coast station in which continuous DSC alerting is available as defined by the IMO regulation for GMDSS?

a) Sea Area A1.
b) Ocean Area Regions AOR-E, AOR-W, POR or IOR.
c) Sea Area A2.
d) Coastal and Inland Waters.

3. What is defined as an area, excluding sea area A1, within the radiotelephone coverage area of at least one MF coast station, in which continuous DSC alerting is available as defined by the IMO?

a) Sea Area A4.
b) Sea Area A3.
c) Sea Area A2.
d) Ocean Area Regions AOR-E, AOR-W, POR or IOR.

4. What is defined as an area, excluding sea areas A1 and A2, within the coverage of an INMARSAT geostationary satellite in which continuous alerting is available?

a) Ocean Area Regions AOR-E, AOR-W, POR or IOR.
b) Sea Area A3.
c) Sea Area A4.
d) Coastal and Inland Waters.

5. Which of the following is not a DSC watch frequency?

a) 2187.5 kHz. **c)** 12577 kHz.
b) 6312 kHz. **d)** 2182 kHz.

6. Which channel is designated for GMDSS Digital Selective Calling?

a) Channel 06 (156.300 MHz).
b) Channel 13 (156.650 MHz).
c) Channel 16 (156.800 MHz).
d) Channel 70 (156.525 MHz).

7. Which types od DSC calls are available on ch.70 ?

a) Distress and Safety **c)** Calls to Coast Guard
b) Public correspondence **d)** All DSC calls

8. What is the primary purpose for Digital Selective Calling (DSC)?

a) DSC provides reception of weather and navigational warnings plus search and rescue information
b) DSC provides low-cost, routine communications for the vessel operator.
c) DSC is to be used for transmitting and receiving distress alerts to and from other ships or coast radio stations via radio.
d) This aids SAR authorities in tracking a vessel's position by satellite.

9. A DSC call with the MMSI number 003669991 is:

a) A vessel operating in Sea Area A3. **c)** A coast station.
b) A group call. **d)** An Intercoastal

10. What is the minimum of information which a DSC distress alert shall contain?

a) Identification of the station in distress, the nature of accident and its position
b) Identification of the station in distress and call sign
c) Identity of the station in distress and the number of crew members
d) Identity of the station in distress and the kind of help required.

11. Which of the following statements concerning DSC equipment is true?

a) The GMDSS Radio Operator is responsible for proper selecting of HF DSC guard channels.
b) All equipment must be type accepted.
c) The vessel's navigational position must be updated, either automatically or manually, no less often that every four (4) hours.
d) All of the above.

12. Which one of the following channels and modes should be used when initiating a distress alert transmission?

a) Channel 6 DSC.
b) Channel 6 Radiotelephony.
c) Channel 13 Radiotelephony and channel 16 DSC.
d) Channel 70 DSC.

13. What action should take a GMDSS Radio Operator when a DSC distress alert is received?

a) No action is necessary, as the DSC control unit will automatically switch to the NBDP follow-on communications frequency.
b) The Operator should immediately set continuous watch on the radiotelephone frequency that is associated with frequency band on which the distress alert was received.
c) The Operator should immediately set continuous watch on VHF channel 70.
d) The Operator should immediately set continuous watch on the NBDP frequency that is associated with frequency band on which the distress alert was received.

14. What is the purpose of a DSC control unit?

a) It decodes and displays the message.
b) It will store the message internally until manually retrieved.
c) It will automatically acknowledge routine DSC calls.
d) All of the above.

15. How many total frequencies are available for DSC distress alerting?

a) One (1).
b) Two (2).
c) Five (5).
d) Seven (7).

16. Which one of the following a compulsory watches must vessel maintain when sailing in Sea Area A1?

a) A continuous DSC watch on 8414.5 kHz plus one other HF DSC frequency.
b) A continuous DSC watch on 2187.5 kHz.
c) A continuous DSC watch on Channel 16.
d) A continuous DSC watch on Channel 70.

17. When must a compulsory equipment vessel carry that is capable of DSC alerting and reception in the MF band?

a) When operating within Sea Area A1.
b) Only when operating outside Sea Area A1.
c) Anytime at sea.
d) All of the above.

18. What is the fundamental purpose of a coast radio station?

a) To provide a delivery service for ships with routine, safety, urgency, or distress message traffic.
b) To automatically connect a vessel placing an INMARSAT call with the station being called.
c) To coordinate search and rescue communications.
d) To provide continuous digital selective calling coverage.

19. A DSC call with the MMSI number 027311111 is:

a) A vessel operating in Sea Area A3.
b) A group call of ships.
c) A U.S. coast station.
d) An Intercoastal vessel.

EMERGENCY PROCEDURE

1. Please write the acronym SAR in full.

2.In the GMDSS, by what means and in which frequency bands should a ship station in distress alert other ships in its vicinity?

a) Using digital selective calling in the very high frequency and medium frequency band
b) Using radiotelephony on 2182 kHz
c) Using radiotelephony on 2182 kHz and on channel 16 (156.8 MHz)
d) Using digital selective calling in radio telephony in the very high frequency, high frequency and very high frequency bands and on radiotelegraphy in the medium frequency band

3.In radiotelephony, how many times shall the safety signal SECURITE be repeated on the announcement of an safety message?

a) Three times
b) Two times
c) Three times at most
d) Six times

4. In the GMDSS, what does the urgency signal consist of?

a) Of the word PAN
b) Of the group of the words PAN PAN
c) Of the group XXX XXX
d) Of the word URGENT

5.Which are the preferred frequencies in radiotelephony for on scene communications?

a) 121.5 MHz and 2045 kHz
b) Ch 13 (156.650 MHz) and 2023 kHz
c) Ch 70 (156.525 MHz) and 2174.5 kHz
d) Ch 16 (156.800 MHz) and 2182 kHz

6. Which frequency in the medium frequency band is used for distress and safety traffic by radiotelephony?

a) 2182 kHz
b) 6090 kHz
c) 518 kHz
d) 2614 kHz

7.Which measures shall be taken by a ship station in receipt of a distress alert transmitted using digital selective calling?

a) The ship station shall set watch on the radiotelephony distress and safety traffic frequency associated with the distress and safety calling frequency on which the distress alert was received
b) The ship station shall remain listening on the frequency on which the distress alert was received
c) The ship station shall repeat the distress alert on the frequency on which it was received in order to alert several more ships
d) The ship station shall, in every case, set watch on the frequencies 2182 kHz and 121.5 MHz

8. In a mobile unit, who shall authorize the transmission of an urgency call format or an urgency signal?

a) The owner of the mobile unit
b) The master of the vessel after consultation with the owner
c) The master or the person responsible for the mobile unit
d) The master or the person responsible for the mobile unit after consultation with the coast station responsible

9. In the GMDSS, what does the distress signal consist of?

a) - SOS
b) - PAN PAN
c) - MAYDAY
e) - QDC

10. In the GMDSS, who is responsible for the control of on-scene communications?

a) The mobile unit in distress
b) The mobile unit in distress and the unit co-ordinating the search and rescue operations
c) The unit coordinating the search and rescue operations
d) The mobile unit in distress or the unit co-ordinating the search and rescue operations

11. What is the fundamental purpose for imposing radio silence?

a) To ensure that interference to proprietary communications is minimized.
b) To ensure that only voice communications can be effected on the distress communications frequency or channel.
c) To ensure that a distressed vessel will have a "window" twice each hour for transmitting routine messages.
d) To ensure that interference on a particular frequency or channel to communications concerning emergency traffic is minimized.

12. When can routine communications be resumed on a frequency or channel on which radio silence has been imposed?

a) Routine communications can resume after determining that the frequency or channel appears to be no longer in use.
b) Routine communications can resume after determining that geographic distance from the distress situation will prohibit any other signal from interfering with emergency communications.
c) Routine communications can resume after the Rescue Coordination Center transmits a message on the frequency or channel being used for emergency communications stating that such traffic has concluded.
d) Routine communications can resume if, in the master's opinion, communications on that frequency or channel will interfere with emergency communications.

13. Which one of the following steps should be taken, if possible, when the vessel must be abandoned because of a distress situation?

a) Alert the U.S. Coast Guard by using the survival craft's portable INMARSAT unit.
b) Program the SART and EPIRB to transmit the vessel's location and situation.
c) Place the SART and EPIRB in the "on" position and secure them to the survival craft.
d) No additional steps are needed as the SART and EPIRB will both automatically float free and operate properly.

14. Who is responsible for transmitting a message stating that distress communications have ceased?

a) The Rescue Coordination Center (RCC) controlling the distress communications.
b) The vessel providing the initial communications with the distressed vessel.
c) The Coast Radio Station (CRS) that was first contacted concerning the distress situation.
d) No formal message must be transmitted as long as no distress-related communications have occurred after reasonable time.

15. What is meant by the term "radio silence"?

a) Stations not directly involved with the on-going distress communications may not transmit on the distress frequency or channel.
b) Stations remaining off the air to safeguard proprietary information.
c) Two three-minute silent periods, at the top and bottom of every hour, that provide a transmitting "window" for distressed vessels to transmit distress alerts.
d) Communications on a distress frequency or channel is banned for 24 hours following the cessation of the distress traffic.

16. How is a normal working condition restored on a narrow band direct printing (NBDP) frequency on which radio silence had been imposed?

a) The Rescue Coordination Center (RCC) that imposed the radio silence must transmit a narrow band direct printing message on the distress frequency stating "SILENCE FINI".
b) The Coast Earth Station (CES) that imposed the radio silence must transmit a NBDP message on the distress frequency stating "SILENCE FINI".
c) The Public Correspondence Station (PCS) that imposed the radio silence must transmit a NBDP message on the distress frequency stating "SILENCE FINI".
d) The High Seas Service (HSS) that imposed the radio silence must transmit a NBDP message on the distress frequency stating "SILENCE FINI".

17. How is a normal working condition restored on a voice frequency or channel on which radio silence had been imposed?

a) The Rescue Coordination Center (RCC) that imposed the radio silence must transmit a voice message on the distress frequency stating "SILENCE FINI".
b) The Coast Earth Station (CES) that imposed the radio silence must transmit a voice message on the distress frequency stating "SILENCE FINI".
c) The Public Correspondence Station (PCS) that imposed the radio silence must transmit a voice message on the distress frequency stating "SILENCE FINI".
d) The High Seas Service (HSS) that imposed the radio silence must transmit a voice message on the distress frequency stating "SILENCE FINI".

18. What is usually the first step for a GMDSS Radio Operator to take when initiating a distress priority message via INMARSAT?

a) By dialing the correct code on the telephone remote unit.
b) By pressing a “distress button” on the equipment.
c) By contacting the CES operator and announcing a distress condition is in existence.
d) By contacting the CES operator using the radiotelephone distress procedure “Mayday”... etc.

FUNDAMENTALS OF COMMUNICATION

1. Which modulation type should normally be used for a radiotelephon connection:

a) H3E
b) R3E
c) J3E
d) F1B

2. Which radioequipment is not necessary for the ships sailing in the sea area A1?

a) NAVTEX receiver
b) EPIRB float free
c) VHF DSC watch
d) HF DSC
e) All equipment is

3. Which radioequipment is not necessary for the ships sailing in the sea area A3?

a) MF watch receiver dedicated to
b) GSM radiotelefone
c) VHF DSC watch receiver
d) Enhanced Group Call
e) Satellite EPIRB

4. What types of EPIRB`s can be used in sea area A2?

a) Cospas/Sarsat or Inmarsat-E or
b) Inmarsat-E only
c) Inmarsat-E or Cospas/Sarsat
d) Cospas/Sarsat only
e) Cospas/Sarsat or VHF

5. How many GMDSS sea areas are there in the world where you can use Inmarsat station ?

a) 4
b) 3
c) 2
d) 16

6. What is the approximate range of VHF radio waves during the day time?

a) 30 nautical miles
b) 150 nautical miles
c) 600 nautical miles
d) 1200 nautical miles

7. Which equation shows right ratio between the frequency (f) and the wavelength (Lambda) of radio waves ?

a) f = C/Lambda
b) f = C x Lambda
c)) f = Lambda/C
d) f = C x 6,28 x Lambda

8. What types of EPIRBs can be used in sea area A4?

a) Cospas/Sarsat or Inmarsat-E or
b) Inmarsat-E only
c) Inmarsat-E or Cospas/Sarsat
d) Cospas/Sarsat only
e) Cospas/Sarsat or VHF

9. What is the minimum operation time of reserve source of energy on ships without an emergency energy source ?

a) 1 hour **b)** 6 hours **c)** 12 hours **d)** 24 hours

10. What is the minimum operation time of reserve source of energy on ships with an emergency energy source ?

a) 1 hour **b)** 6 hours **c)** 12 hours **d)** 24 hours

11. How many pieces of portable GMDSS VHF transceivers must a ship of 450 tons gross tonnage be provided with?

a) 0 **b)** 1 **c)** 2 **d)** 3

12. How many pieces of portable GMDSS VHF transceivers must a ship of 1700 tons gross tonnage be provided with?

a) 1 **b)** 2 **c)** 3 **d)** 6

13. Which frequency does Inmarsat-E EPIRB use for transmission of distress signals?

a) 406 MHz **c)** 156.525 MHz
b) 1.6 GHz **d)** 121.5 MHz

14. What is the approximate range of MF radio waves during the day time?

a) 30 nautical miles **c)** 600 nautical
b) 150 nautical miles **d)** 1200 nautical

15. What is the wavelength, if the frequency is 6 MHz ?

a) 180 m b) **18 m** **c)** 50 m **d)** 500 m

16. What is the total voltage and capacity of two 12V batteries coupled in series if each battery has capacity of 100 Ah ?

a) 12V 100Ah **c)** 24V 100Ah
b) 12V 200Ah **d)** 24V 200Ah