



Government of the People's Republic of Bangladesh

**Department of Shipping**

Sample Question Bank

Engineering ratings/ Welders cum Fitters

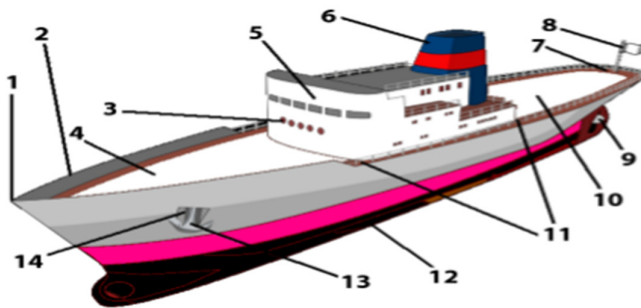
Written & Oral

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## 1.0 Ship and Ship Familiarization

1. What is a cargo ship, passenger ship. (5)
2. What type of cargo is carried by a Bulk carrier ship (5)
3. What is a chemical and oil tanker ship. (5)
4. What is IMO ?What is their role in maritime sector. (5)
5. What is ISM code and its purpose (5)
6. Write down the abbreviations of IMO, STCW, SOLAS, MARPOL and ILO. (5)
7. Write down the name parts of the ship marked 1, 2, 3, 6, 7, 8, 9, 12 and 14 in the picture. (5)



8. What is the responsibility of Department of Shipping, Bangladesh. (5)
9. What do you understand by the following terms :  
Manoeuvring, By The Head, By the stern, Black Out, Under No Command..(5)
10. What are the navigation lights of a bulk carrier and the colour of these lights? (5)

## 2.0 Engineering knowledge

1. (a) What safety devices are fitted in air compressor? (5)  
(b) What safety devices are fitted in purifier? (5)
2. List the items that you will check during watch and record in the log book. (10)
3. What are the cycle degrees of 2 stroke and 4 stroke engine?(5)
4. Give example of roto dynamic p/p ? (5)
5. Give example of positive displacement p/p? (5)

6. What voltage will be considered as High voltage. (5)
7. What are the general refrigerant gas used in ship fridge/ac system ? (5)
8. What is the function of fresh water generator? (5)
9. What is the purpose of Oily water separator (5)
10. What is function of boiler? (5)
11. What is the function of Flywheel and where it is fitted (5)
12. What is the function of Turbo charger and how it is run (5)
13. Write the color code of; (5)
  - a. LO pipe
  - b.FO pipe
  - c. Fresh water Cooling water pipe
  - d. Fire main
  - e. Sea water pump
  - f. Steam pipe
  - g. Sludge pipe
14. Write down short notes on current, resistance, voltage.(5)
- 15.What are the three basic components of electrical system .(5)
16. What is A.C. and D.C. supply ? (5)
17. What are the safeties of a motor. (5)
- 18.What are the safeties of a generator .(5)
19. What is the usage of Emergency Battery at ship. (5)
- 20.Write down the safeties of a battery room (5)
- 21.What is pump and draw a centrifugal pump showing all parts? (5)
- 22.How does a centrifugal pump work? (5)
23. What is the purpose of a heat exchangers? What are the basic types of heat exchangers? (5)
- 24.Draw a typical tubular type of heat exchangers showing all parts. (5)
25. What purpose is served by the turning gear? (4)
26. What are the power source of a emergency fire pump? What are the special features found in it as per location, power system and operation. (5)
27. Draw the ship's electrical distribution system.(5)
- 28.What are conditions of parallel operation of two generators? (5)
29. What are the advantages and disadvantages of centrifugal pump?(5)
30. What is centrifugal pump and positive displacement pump? (5)

31. What is heat exchanger? Where are the uses of heat exchangers in ship? (5)
32. Write the differences between tubular and plate type heat exchangers. (5)
33. What is a purifier and a clarifier? Describe how a Fuel Oil purifier works. (5)
34. What are the uses of compressed air on ship? (5)
35. What is the purpose of air bottle on board (5)
36. What are the major parts of a large 2 stroke engine. (5)
37. Draw a 2 stroke and 4 stroke engine timing diagram indicating sequence of functions. (5)
38. Indicate crank angles related to above diagram. (5)
39. Explain how do you identify between a 2 stroke and a 4 stroke engine. (5)
40. What are the things necessary for completing combustion. (5)
41. What is air fuel ratio and compression ratio and why it is important. (5)
42. What is the function of bed plate? (5)
43. What is the function of holding down bolts ? (5)
44. What is the function of fuel pump? (5)
45. What is the function of Fuel injector?(5)
46. Write the name of basic two types of fuel pumps. (5)
47. What is the function of camshaft and How a camshaft is driven from engine? (5)
48. Explain why main engine for a large ship is usually 2 stroke engines? (5)
49. What is the function of tie rod? Which parts of the engine is hold by tie rods? (5)
50. What is the function of holding down bolts? (5)
51. What is the function of a turbocharger? (5)
52. What is the function of cylinder relief valve? (5)
53. What is the function of cylinder indicator cock? (5)
54. Why engine need to turn with indicator cock open before starting? (5)
55. How piston cooling is carried out in a large two stroke engine? (5)
56. What are the common hand tools used in a ship workshop? (5)
57. What are the precaution to be observed during use of such hand tools? (5)
58. Write the names of different types of bearings. (5)

### 3.0 Deck Machinery

1. What is ship's list and Trim (5)
2. What is mooring operation. (5)
3. What is cargo operation. (5)
4. What is anchor and anchoring (5)
6. What is Cargo crane & Engine room overhead crane.(5)
7. What is mooring winch and windlass. (5)
8. What is ship draft aft side and fwd side. (5)
9. What is the purpose of ship's rudder and propeller. (5).
10. What is the purpose of Ballast Tank and Fuel oil Bunker tank. (5)
11. What is ship rolling and pitching. (5)
12. What is a ship's cofferdam. (5)
13. How you would take sounding of a ship's tank. (5)
14. What is purpose of ship's gangway, pilot ladder, Lifeboat embarkation ladder (5)

## 4.0 Machinery Operation

1. Why Main engine or boiler exhaust smoke color could be black (5)
2. What are the safety devices fitted with a large boiler?(5)
3. What is the difference between fire tube and water tube boiler? (5)
4. What is main and auxiliary boiler? (5)
5. What is fire tube and water tube boiler? (5)
6. Write the differences between water tube and fire tube boiler. (5)
7. Write down the name of boiler mountings and accessories(5)
8. What are the personal protective equipment should be used during engine overhauling? (5)
9. List the items to be tested before preparing for sea. (5)
10. Describe the procedure of handing over a watch. (5)
11. Describe the procedure of taking over a watch. (5)
12. What are the uses of boiler in ship? (5)
13. What are the uses of steam in ship? (5)
14. What are the precautions to be taken during scavenge space cleaning? (5)
15. How you will clean a fuel oil and lub oil strainer (5)

16. What are the items to check before starting an auxiliary engine (generator)? (5)
17. What are the things to prepare for Main engine for maneuvering? (5)
18. Describe how your ship's stores, especially how the chemical store is arranged. (5)
19. Explain how suction air enters into a cylinder of a 2 stroke and a 4 stroke engine. (5)
20. How the fuel pump function is controlled? (5)
21. What is function of piston ring? (5)
22. What are piston ring clearances? (5)
23. How will you measure the clearances of piston ring? (5)
24. Write the different parts of fuel injection pump. (5)
25. Write the different parts of fuel injection valve. (5)
26. What is the overhauling procedure of a fuel injection pump? (5)
27. What is the overhauling procedure of a fuel injection pump? (5)
28. Make a list of necessary items you need for overhauling a diesel engine . (5)
29. Why marking is necessary during dismantling a machine? (5)
30. How will you make marking on the body of machine. (5)

## 5.0 Welding /Brazing/ Cutting

1. What is welding? Write down the types of welding. (5)
2. Write down the precautions of welding. (5)
3. What is the Oxygen & acetylene bottle color. What are the safeties of these bottle. How they should be stored. (5)
5. Describe with an aid of a sketch the principal of electric arc welding. (5)
6. Name some welding faults. (5)
7. Sketch 5 of these welding defects. (5)
8. What the safeties to be observed before and during welding in ship? (5)
9. How welding rods to be preserved (5)
10. State the cause of electric shock ? (5)
11. What are the safety of Arc welding ? (5)
12. How you will overcome of electric shock during welding ? (5)
13. What is hot work permit and when to use it on board ? (5)
14. What are the maintenance of Arc welding machine ? (5)
15. Describe a A.C. welding machine ? (5)
16. How Electrodes are selected for a particular job? (5)

17. What are the preparation of welding procedure ? (5)
18. What are the precautions of Gas welding ? (5)
19. What are the risk from gas welding ? (5)
20. How you will avoid gas welding danger ? (5)
21. What are the gases we use in welding ? (5)
22. What are the maintenance procedure of Acetylene cylinder ? (5)
23. What are the handling procedure of oxygen and acetylene cylinders ? (5)
24. Write the formula for selecting current in Arc welding ? (5)
25. What are the precaution for metal cutting? (5)
26. Why we adjust current during arc welding. (5)
27. How will you select a proper gas cutting nozzle during gas cutting. (5).
28. What is brazing. (5)
29. What is the procedure for carrying out an overhead welding. (5)
30. What is the procedure of carrying out cast iron welding.(5)
31. What is risk assessment ? (5).
32. What is tool box meeting and what are the things discussed during tool box meeting. (5).
33. What are the general procedure of hot work on board. (5).
34. What is ship's general hot work policy.(5)
35. Name five places of a ship where welding is not permitted. (5).
36. State the authorization procedure prior doing welding (5).
37. Why it is important the earth connection during welding. (5)
38. What type of glass is fitted on a electric arc welding helmet. (5)
39. What are the checks to be carried out on welding cables (5)
40. What are the checks before starting arc welding and gas welding. (5).

## 6.0 Personal Safety, Pollution prevention, Security & Enclosed space

1. What are the checks you will carry out before entering the bilge tank. (5)
2. What are the documentation to be completed prior entering in enclosed space (5)
3. What is Fire triangle? (5)
4. Draw a fire main system found in ship. (5)
5. What types of extinguisher to be used ;



- (a) Electric fire
  - (b) Oil fire
  - (c ) Fire in combustible materials
  - (d) Metal fire
6. What is the basic principal of fire fighting. (5)
  - 7.What are the fixed fire extinguishing system on board and what are the medium used for these fire fighting equipment. (5)
  - 8.Name the fire fighting appliances generally available on board. (5)
  - 9.What are the fire fighting appliances fitted on board tanker cargo space. (5)
  - 10.What is your course of action in case of discovering a. Small fire b.Large fire (5)
  11. What is fire training manual and where you can find it. (5)
  - 12.What are the MARPOL annexes governing; (5)
    - a.Oil pollution
    - b.Bulk chemicals
    - c.Harmful substances taken in packaged form
    - d.Garbage
    - e. Sewage
    - f.Air
  7. What are the color codes of fire extinguisher on board and what type of fires this can be used; (5)
    - a.CO2
    - b. Water
    - c. Powder
    - d.Foam
  8. What is normal oxygen % in air ? What are the percentage accepted for safe entry to enclosed space. (5)
  10. What are the areas can be considered as enclosed space ? (5)
  11. How many compulsory annex of MARPOL and what are they? (5)
  12. How garbage management done on board. Color coding of these garbage.What are the regulation of disposing these garbages at sea. (5)
  13. What are procedure you follow to enter into the enclosed space. (5)
  - 14.What is unmanned engine room system. What are the safety precaution you would follow prior entering into the UMS engine room. (5)
  15. What type of precautions you should maintain before any electrical work? (5)

16. Describe the procedure of painting. (5)
17. What are the designated hot work area in ship? (5)
18. What are the procedures to be maintained for doing any hot work outside the hot work area? (5)
19. Write down the life saving appliances available on board, their location and how you use them in emergency. (5)

## 7.0 House keeping and Store management

1. What is the procedure, when you need some store item & it's not there on board. (5)
2. How important it is to reuse the rags wherever possible & not to waste the consumable store items? (5)
3. How will you keep an inventory of store items. (5)
4. Name 10 items usually kept at Engine store. (5)
5. Describe when to discard a defective store item. (5)

## 8.0 Workshop practices

1. Write down the 10 parts of lathe machine. (5)
2. Write down the name of 10 hand tools in engine room. (5)
3. Give a list of portable electrical equipment on board ship and precaution prior using it. (5)
4. Write down the name & purposes of safety measuring equipment are used in electrical system. (5)
5. What are the common power tools used in a ship workshop? (5)
6. What are the precaution to be observed during use of such power tools? (5)
7. What are safety while operating a lathe machine. (5)
8. What is tail stock with lathe machine. (5)
9. What are the safeties to be observed during grinding. (5)
10. What is drill bit and drill bit chuck. (5)
11. What is turning tool, parting tool used in a lathe machine. (5)
12. What is turning operation in a machine. (5).

13. What is a tool board in an Engine Room workshop and what are the tools being preserved. (5)
14. What is a) Flaring tool b) Flange expander. (5)
15. What is internal and external threads. (5)
16. What are the purposes of a) Taps b) Dies. (5)
17. What type of Fire fighting appliances are available at Engine room workshop. (5)
18. Briefly write down the work shop safety. (5)

## 9.0 Basic course questions

### 9.1 Personal Safety and social responsibility

1. What is the full name of PSSR?
2. Objective of PSSR course?
3. What is emergency?
4. Give five examples of emergency.
5. What is the general emergency alarm signal?
6. What is the fire alarm signal?
7. What is the man over board signal?
8. What is the abandon ship signal?
9. What is master list?
10. Describe the types of maritime pollutions?
11. What is called ENCLOSED SPACE?
12. Name some personal protecting equipment's.
13. What is the intension of the safety meeting?
14. What is the minimum rest hour in a day on board?
15. What are the new development in PSSR course?
16. What is life boat and their capacity.
17. What are the items included in the life boat for survival.
18. How you can lower a life boat.
19. What is offload and onload release.
20. What are the maintenance carried out on Life boat.
21. Why rescue boat used on board?

- 22.What is the purpose of life buoy on board and why some of them fitted with self igniting light?
- 23.What is the difference between life boat and rescue boat?
- 24.Where you can find following your emergency duties.
- 25.Why on board provided with fire fighting and LSA appliance manual.

## **9.2 Fire prevention and fire fighting**

- 1.What is FPFF?
- 2.Normally how many types of fire occur on board ship?
- 3.Explain the classification of fire ?
- 4.What is solid fire and what is Extinguisher color?
- 5.what is liquid fire and what is Extinguisher color?
- 6.What is Metallic fire and what is Extinguisher color ?
- 7.Onboard ship ,What type of fire detectors are normally used?
- 8.What types of breathing apparatus are used onboard?
- 9.How many types of organization exists onboard a ship?
- 10.Describe the fire fighting organization.
- 11.What is fire and how does it work?
- 12.what is the chemical composition of normal air?
- 13.what are the main source of fire onboard ship?
- 14.In case of fire on board ,what are your instant actions?
- 15.what type of extinguish is normally used in case of A ,B,C,D,E types of fire
- 16.How the fire normally extinguished?
- 17.What are the color code of portable fire extinguishers?
- 18.What is fire triangle?
- 19.Make a list of fire protection and fire fighting system on board as per SOLAS.
- 20.List the fire prevention and fire fighting equipment on board engine room.
- 21.What is upper explosive limit and lower explosive limit.
- 22.What are the special fire fighting equipment in on board tanker.
- 23.What is Inert gas system and why it is used on board.

## **9.3 SAT & DSD**

- 1.What is SAT and what are the topics covered ? (5)
- 2.What is DSD and what are the topics covered? (5)
- 3.What are three security level on board. (5)
- 4.On board where you can find your security duties. (5)
- 5.What is your course of action in case you notice the breach of security. (5)
- 6.What is your course of action incase you find an unattended luggage or items appear to be explosives. (5)
- 7.What are your responsibilities when you are stationed in gangway for security duties. (5)
- 8.What areas are restricted area on board ship? (5)
9. What is ISPS code (5).
10. What do you understand by SSO. (5).
18. Why Security is important on board ship. (5)
- 19.What is Ship security plan and where it is located. (5)
- 20.What are the items included in SSP. (5)
- 21.What is stowaway? What are the issues with Stowaway? How to avoid stowaway? (5)
- 22.What are the piracy prone area ? (5)
- 23.What are the access point onboard ship? (5)
- 24.What are the security items available on ship? (5)
- 25.What is abandon ship? (5)
- 26.If ship is abandoned what is your duty? (5)
- 27.What is man overboard? (5)
- 28.If you have seen someone fall down in water what is your duty? (5)

## **9.4 Elementary First Aid**

- 1.What is EFA and what are the topics covered?
- 2.What is the aim of EFA?
- 3.What is called UNCONSCIOUSNESS?
- 4.Causes of UNCONSCIOUSNESS?
- 5.What is shock?
- 6.What is the effect of shock?
- 7.Types of shocks.

- 8.What is hypothermia?
- 9.What is the reason of hypothermia?
- 10.What action you will take incase of person having electrical shock.
- 11.Where on board medical first aid box generally located and what are the items can be found.
- 12.How you will give a person first aid who just been recovered from sea and unconscious.

## **9.5 Maritime General knowledge**

1. What is a a) foreign going ship b) Inland ship (5)
2. Name 05 types of Ocean going vessels (5)
3. Name two Important Canals in maritime navigation route.(5)
4. What is flag state and what is port state control. (5)
- 5.What is flag of convenience. (5)
- 6.What is MLC 2006 and what the objective of this convention. (5)
- 7.What are the important itmes under MLC. (5)
- 8.What is complaint procedure . (5)
- 9.What is work hour and rest hour under MLC 2006. (5)