

**MERCHANT MARINE ACADEMY OF MACEDONIA
SCHOOL OF ENGINEERS**

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Date:

Student's full name:

A.F.M.:

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FINAL EXAM IN MARITIME ENGLISH

1. Fill in the gaps with an appropriate word from the list. (45 p.)

A.

condition circulating steam warmed pitted temperature corrosion

cylinders highest remains coils air cooling fit injected

When we prepare a diesel engine for running, the _____ and pistons must be _____ up gradually over a period of at least eight hours to a _____ of about 140 degrees F. This is done by starting up the _____ pumps to circulate these systems and by removing all the _____ in these spaces with the help of the air cocks which are located at the _____ points in the systems. After that, _____ can pass through the heating _____ usually fitted in the sumps or drain tanks. Steam should never be _____ directly into a water system because it may cause _____. We must also check the _____ of the water in the jacket _____ water system. We should _____ a polished mild steel rod in the drain tank and if it _____ polished, the water is good, but if it becomes _____ or dull, we have to change the water and find the cause.

B.

suction centrifugal pumping displacement force casing move

electric raise impeller condensate outlet chamber steam increase

A pump is a device which is used to _____ liquids from a low point to a high point. There is a great variety of liquids on the _____ on board a ship such as fuel oil, lub oil, cooling water, boiler feedwater, _____, fresh and sea water, etc. All these liquids are moved by pumps.

A _____ system aboard ships consists of a _____ branch, a pump and a discharge branch. Pumps can be driven by _____ engines, diesel engines, petrol engines and to a great extent by _____ motors.

There are two main groups of pumps in marine use: the _____ pumps and the _____ pumps. In the first group, the _____ or decrease of

the volume of the pump _____ causes the suction or discharge of the liquid or gas. In the second group, there is a(n) _____ rotating at high speed inside the pump _____. The liquid enters the pump through the suction pipe, it is thrown against the surrounding casing by centrifugal _____ and finally it is discharged through the delivery _____.

2. Match the words to their synonym or explanation. (10 p.)

- | | |
|---------------|---|
| 1. stroke | a. burning |
| 2. port | b. raise |
| 3. combustion | c. grow larger |
| 4. discharge | d. travel of the piston between T.D.C. and B.D.C. |
| 5. impeller | e. fill up |
| 6. increase | f. draw in |
| 7. suck | g. rotor |
| 8. capacity | h. hole |
| 9. expand | i. cubic content |
| 10. charge | j. delivery |

3. Fill in the blanks with the correct form of the words in the parentheses. (15 p.)

1. The _____ (**remove**) of air from the cylinders is done with the help of air cocks.
2. We have to check that the mechanical _____ (**lubricate**) are full and that they work well.
3. Before closing the crankcase doors, we should make an _____ (**examine**) inside the crankcase to make sure everything is correct.
4. We should pump up the starting air _____ (**reserve**) to the maximum pressure.
5. The cooling water system must be kept in _____ (**operate**) and the inlet temperature of the cooling water should _____ (**various**) between 110 degrees to 150 degrees F.
6. You should always consult the manufacturers' _____ (**recommend**).
7. The crankshaft should be checked for _____ (**deflect**).
8. The engine _____ (**indicate**) cards show if the fuel pumps need _____ (**adjust**).

4. Circle the correct choice. (10 p.)

1. In a 4-stroke diesel engine the stroke which provides power for the propulsion of the ship is:
 - a. the compression
 - b. the combustion
 - c. the suction

2. During the compression stroke:
 - a. the exhaust valve is open
 - b. the inlet valve is open
 - c. the inlet and exhaust valves are closed

3. In a 2-stroke diesel engine _____ may happen at the same time.
 - a. charging of fresh air and exhaust
 - b. compression and combustion
 - c. combustion and exhaust

4. A propeller is more efficient:
 - a. the smaller it is and the faster it turns
 - b. the larger it is and the faster it turns
 - c. the larger it is and the slower it turns

5. A medium-speed diesel engine is _____ than a slow-speed diesel engine.
 - a. bigger and cheaper
 - b. smaller and more expensive
 - c. smaller and cheaper

6. The vane type of pump is a:
 - a. rotary pump
 - b. centrifugal pump
 - c. reciprocating pump

7. A gear-wheel pump is used to pump mostly:
 - a. water
 - b. lub oil
 - c. all kinds of liquids

8. A double-acting ram pump has:
 - a. double pistons
 - b. double suctions and one discharge
 - c. double suctions and double discharges

9. In reciprocating displacement pumps there is always a _____ which moves up and down in the pump chamber.
 - a. gear
 - b. piston
 - c. impeller

10. The diffuser type of pump is a:
 - a. rotary pump
 - b. centrifugal pump
 - c. reciprocating pump

5. **Underline the correct choice.** (5 p.)

1. For proper maintenance we should always read the (**instructor's / constructor's**) instructions. In this way we will (**assure / ensure**) (**sufficient / efficient**) working of the machinery and we will minimise breakdowns.

2. Pistons should be examined for (**cracks / scratches**).

3. (**Carbon / Scale**) deposits can appear in scavenge ports and exhaust manifold.

4. (**Scale / Sediment**) can be removed by flushing with water.

5. When we replace piston rings we should leave (**sufficient / efficient**) clearance for the (**contraction / expansion**) of the rings.

6. In a 2-stroke diesel engine instead of inlet valve there are (**ports / parts**) which are covered and uncovered by the movement of the (**camshaft / piston**).

6. **The following sentences are the steps in preparing the engine for running, but they are not in the right order. Number them in the correct order.** (15 p.)

- Fill up the fuel oil tanks and lub oil tanks.
- Turn the engine with the help of turning gear and check for water leakages.
- Start up the crankcase lub oil pump and check the flow of oil from the bearings and guides.
- 1) Start up the circulating pumps to warm up the engine.
- Prime the fuel oil system and check for leakages.
- Check the reversing and control gear.
- Pass the steam through the heating coils in the drain tanks.
- Put in the turning gear and check that everything is correct in the crankcase.
- Disengage the turning gear.
- Circulate cooling water through the valves.

GOOD LUCK!!!