

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

**Course: Maritime English**

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**FINAL EXAM**

(Για μεταφορείς που παρακολούθησαν το μάθημα μέχρι και το ακαδ. έτος 2011-2012)

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

**A.**

*larger reduction slower cheaper propeller slow tankers cylinders  
efficient medium-speed directly weight low operate slow-speed*

Large diesel engines which have \_\_\_\_\_ nearly 3ft in diameter turn at the relatively \_\_\_\_\_ speed of about 108 r.p.m. They are known as \_\_\_\_\_ diesel engines and are used mainly in \_\_\_\_\_ and bulk carriers. They can be connected \_\_\_\_\_ to the propeller without \_\_\_\_\_ gears and they have \_\_\_\_\_ fuel consumption.

More and more, however, of the \_\_\_\_\_ merchant vessels are being powered by \_\_\_\_\_ diesel engines. These \_\_\_\_\_ between 150 and 450 r.p.m. Therefore, they are connected to the \_\_\_\_\_ by gearing, since a propeller is more \_\_\_\_\_ the larger it is and the \_\_\_\_\_ it turns. These engines are \_\_\_\_\_ than slow-speed diesel engines and their smaller size and \_\_\_\_\_ can result in a smaller, cheaper ship.

**B.**

*displacement gear-wheel device suction piston raise gas non-return  
impeller reciprocating interlocking rotary volume pumping centrifugal*

A pump is a \_\_\_\_\_ which is used to \_\_\_\_\_ liquids from a low point to a high point.

A \_\_\_\_\_ system aboard ship consists of a \_\_\_\_\_ branch, a pump and a discharge branch.

In the \_\_\_\_\_ pump, the increase or decrease of the \_\_\_\_\_ of the pump chamber causes the suction or discharge of the liquid or \_\_\_\_\_.

A simple kind of \_\_\_\_\_ pump is the single-acting ram pump which consists of a \_\_\_\_\_ moving up and down inside a chamber fitted with \_\_\_\_\_ suction and delivery valves.

The \_\_\_\_\_ pump is an example of \_\_\_\_\_ displacement pump. It consists of \_\_\_\_\_ gear wheels which rotate.  
In the \_\_\_\_\_ pump there is a(n) \_\_\_\_\_ rotating at high speed inside the pump casing.

**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.
- charging of fresh air and exhaust
  - compression and combustion
  - combustion and exhaust
4. A propeller is more efficient:
- the smaller it is and the faster it turns
  - the larger it is and the faster it turns
  - the larger it is and the slower it turns
5. A medium-speed diesel engine is \_\_\_\_\_ than a slow-speed diesel engine.
- bigger and cheaper
  - smaller and more expensive
  - smaller and cheaper
6. The vane type of pump is a:
- rotary pump
  - centrifugal pump
  - reciprocating pump
7. A gear-wheel pump is used to pump mostly:
- water
  - lub oil
  - all kinds of liquids
8. A double-acting ram pump has:
- double pistons
  - double suctions and one discharge
  - double suctions and double discharges
9. In reciprocating displacement pumps there is always a \_\_\_\_\_ which moves up and down in the pump chamber.
- gear
  - piston
  - impeller
10. The diffuser type of pump is a:
- rotary pump
  - centrifugal pump
  - reciprocating pump

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

- 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.
- 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.
- 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.