

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

**Course: Maritime English**

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**Full name:**

**Student number:**

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**FINAL EXAM**

**A. What do the following words mean? Underline the correct choice. (8 p.)**

1. to countersign: to **add/delete/deny** one's signature to a document
2. to crosscheck (of results): to **confirm/cross out/witness** the results by using an alternative way of checking
3. to verify: to prove that smth is **false/true/incomplete**
4. to retain (of pressure): to **maintain/reduce/adjust**
5. to sound (of a tank): to **measure/check/examine** the depth

**B. Match the words to their explanation. (10 p.)**

- |                             |                                      |
|-----------------------------|--------------------------------------|
| 1. insulate                 | a. balancing/mixing tank             |
| 2. buffer tank              | b. go down, sink                     |
| 3. pressure retaining valve | c. increase, enhance                 |
| 4. sludge                   | d. disperse through outward movement |
| 5. settle down              | e. excess                            |
| 6. centrifuge               | f. protect against heat dispersal    |
| 7. boost                    | g. control, adjust                   |
| 8. regulate                 | h. pressure reducing valve           |
| 9. purify                   | i. remove impurities, clean          |
| 10. surplus                 | j. mud, deposits of fuel             |

**C. Write down the lubricant additive(s) which would help with the problem.**

**(10 p.)**

1. Major accumulation of deposits on piston crown and cylinder liner: .....
2. Difficulty in pumping the lube oil at low temperatures: .....
3. Scored, scratched cylinder liner surface: .....
4. Fouled surfaces: .....
5. Signs of corrosion on metal surfaces: .....

**D. Fill in the gaps using the words below. (15 p.)**

*screws      volute      rotary      centrifugal      multistage*  
*displacement      impeller      casing      reciprocating      vanes*

There are two main groups of pumps: the \_\_\_\_\_ pumps and the \_\_\_\_\_ pumps. The 1<sup>st</sup> group is subdivided into \_\_\_\_\_ pumps in which a piston moves up and down, and \_\_\_\_\_ pumps in which the moving part rotates. The rotating part can be gears, \_\_\_\_\_, \_\_\_\_\_, etc. The centrifugal pump on the other hand consists of an \_\_\_\_\_ which rotates at high speed inside the pump \_\_\_\_\_. The most common type of centrifugal pump is the \_\_\_\_\_ which has taken its name after the spiral case which surrounds the impeller. If the centrifugal pump has two or more impellers, it is called \_\_\_\_\_.

**E. Fill in the blanks with a word of your own choice. (10 p.)**

The lubrication of the cylinder is very important, first because it forms a \_\_\_\_\_ of oil between piston rings and cylinder \_\_\_\_\_, thus reducing friction, and secondly because it neutralises the acid products of combustion and reduces cylinder \_\_\_\_\_ considerably. The cylinder oil has high \_\_\_\_\_ and a high (Total Base Number) TBN value. It is drawn from the cylinder oil \_\_\_\_\_ tank to a small service tank by separate \_\_\_\_\_. From there, the oil is supplied to lubricators by \_\_\_\_\_ and is led through drillings onto the liner surface where grooves distribute it circumferentially around the liner, and the piston \_\_\_\_\_ spread it up and down the surface of the liner. There is not \_\_\_\_\_ of the used oil because it is finally burnt with the \_\_\_\_\_.

**F. Insert an appropriate derivative of the words in the parentheses. (15 p.)**

1. High water \_\_\_\_\_ (**contain**) in the fuel causes \_\_\_\_\_ (**error**) combustion and \_\_\_\_\_ (**corrode**) to injectors.
2. Highly \_\_\_\_\_ (**viscosity**) fuels need special \_\_\_\_\_ (**treat**).
3. \_\_\_\_\_ (**distil**) fuels have cleaner \_\_\_\_\_ (**emit**) than \_\_\_\_\_ (**residue**) fuels.
4. The nozzle \_\_\_\_\_ (**assemble**) is screwed at the bottom of the \_\_\_\_\_ (**inject**) \_\_\_\_\_ (**hold**).

5. Chemical \_\_\_\_\_ (**stable**) is an important \_\_\_\_\_ (**specify**) of lubricating oils.
6. The HFO \_\_\_\_\_ (**purify**) separates water and \_\_\_\_\_ (**impure**) from the fuel.

**G. Underline the correct alternative. (12 p.)**

1. The VI of a lubricant shows how **stable/variable** it is to variations of temperature.
2. In a **displacement/centrifugal** pump, the increase of the volume of the pump chamber causes the **discharge/suction** of the liquid.
3. The time of ignition of the fuel is directly influenced by the **cetane number/water content**.
4. Verification and countersigning of bunker receipt is a(n):
  - a. **pre-bunkering procedure**
  - b. **after bunkering procedure**
5. The **lower/lowest** the pour point of a fuel, the **less/more** viscous it is.
6. The acronym CCAI stands for: a. **calculated carbon aromaticity index**  
b. **cracked carbon aromaticity indication**
7. The transfer pumps are **high/low** pressure pumps while the fuel pumps are **high/low** pressure pumps.
8. The element which causes oxidation to the engine is **silicon/sulphur**.
9. In the **storage/settling** tanks the fuel is constantly heated to **lower/raise** the viscosity-grade and thus quicken the separation of fuel from water and impurities.
10. A screw pump is a **centrifugal/rotary** pump which is used to pump mostly **viscous/thin** fluids.
11. The crosshead and the guides are lubricated by **cylinder/circulating** lube oil.

**H. Answer one (1) of the following questions. (20 p.)**

1. What are the objectives of lubrication?
2. What does the fuel injector do? Why is it very important?
3. What safety measures should you take before bunkering?

***GOOD LUCK!!!***