

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

**Course: Maritime English  
Academic Year: 2014 – 2015  
Semester: C (Retakes—before Manila)  
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Exam period: September 2015**

**Student Name:  
Student Number:**

**FINAL EXAM**

**A. Write down the lubricant additive(s) which would help with the problem. (5x1)**

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

**B. Fill in the gaps using the words below. There are two extra words. (15x1.5=22.5)**

*clearances carbon incident flammable ash rupture affect plug injector  
distillation illuminated needle notify sulphur calcium SOPEP bunkering*

- Marine \_\_\_\_\_ is the supply of fuel oil for ships.
- \_\_\_\_\_ scuppers when loading or discharging oil.
- The process through which marine fuels are obtained is called fractional \_\_\_\_\_.
- The acronym CCAI stands for Calculated \_\_\_\_\_ Aromaticity Index.
- Piston rings should be checked for proper \_\_\_\_\_ in order to avoid wear and breakage.
- \_\_\_\_\_ the Officer of the Watch when a failure of machinery has occurred which may \_\_\_\_\_ navigation.
- Keep the E/R properly \_\_\_\_\_ at all times.
- When an oil pollution \_\_\_\_\_ occurs, the ship follows the \_\_\_\_\_ in accordance with the requirements of MARPOL.
- Do not use untested equipment; it may \_\_\_\_\_ or break.
- The \_\_\_\_\_ stem and its return spring of a fuel \_\_\_\_\_ are fitted in the injector holder.
- Corrosion is caused by the presence of \_\_\_\_\_ in the fuel.
- Do not leave \_\_\_\_\_ material in buckets or open containers; it may cause fires.

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

*centrifugal multistage screws volute rotary  
impeller casing reciprocating displacement 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 \_\_\_\_\_.

**D. Match the words to their definitions. (10x1)**

*scale emission distilled stalling (of engine) sink  
ullage accumulate purify scuffed sludge*

- the distance from the surface of the oil in a tank to the top .....
- discharge of gases, smoke, etc. ....
- reduction of revolutions, eventual stopping .....
- mud, deposits of fuel .....
- build up .....
- deposits of salt .....
- pitted, with deep scratches .....
- remove impurities, clean .....
- refined .....
- settle down .....

**E. Complete the sentences with the correct form of the words in parentheses. (15x1)**

- Empty the \_\_\_\_\_ (contain) of this box on the floor.
- Changes in temperature can cause \_\_\_\_\_ (deform) in metal parts.
- The \_\_\_\_\_ (clarify) separates dirt from the fuel.
- We must lower reduce the fuel \_\_\_\_\_ (consume).
- \_\_\_\_\_ (distil) fuels have cleaner \_\_\_\_\_ (emit) than \_\_\_\_\_ (residue) fuels.
- Bunkering samples are sealed for later \_\_\_\_\_ (verify) of the supplied product quality.
- Engineers must follow the \_\_\_\_\_ (instruct) of the engine \_\_\_\_\_ (construct).
- There are problems with the \_\_\_\_\_ (lubricate) of the cylinder liner.
- Oxidation of the lube oil is prevented with certain \_\_\_\_\_ (add).
- This oil is too \_\_\_\_\_ (viscosity). It needs special \_\_\_\_\_ (treat).
- Fractional \_\_\_\_\_ (distil) is the process through which the products of crude oil are obtained.

**F. Underline the correct alternative. (12x1)**

1. The VI of a lubricant shows how **stable/variable** it is to variations of temperature.
2. Verification and countersigning of bunker receipt is a(n):
  - a. **pre-bunkering procedure**
  - b. **after bunkering procedure**
3. The **lower/lowest** the pour point of a fuel, the **less/more** viscous it is.
4. The acronym CCAI stands for: a. **calculated carbon aromaticity index**  
b. **cracked carbon aromaticity indication**
5. The transfer pumps are **high/low** pressure pumps while the fuel pumps are **high/low** pressure pumps.
6. The element which causes oxidation to the engine is **silicon/sulphur**.
7. 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.
8. A screw pump is a **centrifugal/rotary** pump which is used to pump mostly **viscous/thin** fluids.

**G. Answer the following question (20.5)**

What is the purpose of lubrication?

*GOOD LUCK!!!*