

Merchant Marine Academy of Macedonia- School of Engineers		
Course: Maritime English	Academic year: 2024-2025	Exam period: February
Semester: C'	Date: 12/02/25	Instructors: A. Birbili, E. Xenitidou
Student's name:		
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Exam paper grade:		Instructor's signature

Complete the text using the following words: mineral, friction, metals, wear, consult, distillation, manual, performance, running, antifouling, sealing, coolant, corrosion, sticking, inadequate.-
15 points

The main task of lubrication is to reduce _____ between the moving parts of an engine. In this way we ensure better _____ of the engine and reduction of _____ due to friction. Lubrication also acts as a _____, because it absorbs a considerable amount of heat which is released from friction. Furthermore, it assists the piston rings in _____ the combustion chamber. Moreover, it protects the surfaces from _____, even when the engine is out of _____, thanks to the good tenacity lubricants have on _____. Finally, it keeps the metal surfaces clean due to the _____ property of lubricating oil. Correct lubrication of the engine is of great importance because _____ lubrication would lead to the seizing of bearings and _____ of the engine. The correct choice of lubricating oil is essential too, and we should always _____ the engine constructor's _____ as to the recommended type of oil for the particular engine. The types of lubricating oils used in marine diesel engines are generally _____ oils, coming from the residues of crude oil after its _____.

Find the correct form of the word in capital letters - 10 points

1. Empty theCONTAIN of this box on the floor.
2. ChemicalSTABLE is an important specification of lubricating oils.
3. Discharge of gases or smoke isEMIT.
4.ADD in the lubricating oil improve its quality.
5. WearPREVENT limit the wear due to friction.
6. The.....CENTRIFUGE separator separates water andIMPURE from the fuel.
7. Fuels that are refined petroleum products are calledDISTIL
8. HFO is a highlyVISCOSITY liquid.
9. Something that is brought into force or is valid is alsoEFFECT.

Underline the correct alternative. - 10 points

- **Detergents/ Dispersants/ Corrosion inhibitors** keep sludge, carbon and other deposits suspended in the oil.
- **Viscosity index improvers/ Wear preventers/ Anti-foamants** limit the damage that is caused by friction.
- **Viscosity Index Improvers/ Detergents/ Pour point depressants** lower the freezing point of oil.
- **Antioxidants/ Viscosity Index Improvers/ Dispersants** increase the VI of the oil.
- **Antifoamants/ Antioxidants/ Corrosion Inhibitors** prevent the corrosion of metal surfaces.
- The crosshead and the guides are lubricated by **cylinder oil/ circulating lube oil/ turbine oil**.
- The Society of Automotive Engineers has **distributed/ classified / divided** oil viscosity from SAE 10 to SAE 250.
- The element which causes oxidation to the engine is **ash/ Sulphur/ silicon**.
- The acronym CCAI stands for **Calculated Calcium Aroma Indication/ Cracked Carbon Atom Index/ Calculated Carbon Aromaticity Index**.
- The heating value of a fuel is commonly expressed in **r.p.m./ b.t.u./p.p.m.**

Fill in the gaps with a word from the list. There are two (2) extra words. – 15 points

<i>mixing</i>	<i>atomisers</i>	<i>injurious</i>	<i>drillings</i>	<i>fortified</i>	<i>bunkering</i>
<i>obtained</i>	<i>fenders</i>	<i>particles</i>	<i>distilling</i>	<i>treatment</i>	<i>alongside</i>
<i>transition</i>	<i>suspending</i>	<i>combustion</i>	<i>fractional</i>	<i>eliminate</i>	

- The process through which marine fuels are _____ at different points of the _____ tower according to their boiling temperatures is called _____ distillation.
- In some cases, a _____ tank is used for the gradual _____ from HFO to MDO.
- HFO cannot be pressed through the injectors without _____.
- HFO needs purifying to _____ water and dirt _____
- Lube oils are _____ with chemicals.
- _____ in the crankshaft take the oil to the crankpin and bottom end bearings.
- Sulphur can be very _____ to engine parts during combustion because it changes into acid.
- Sediment is formed when _____ solid particles in the fuel coagulate and sink down.
- Marine _____ is the supply of fuel oil for ships.
- A barge equipped with _____, hoses and pumps, brings the required product _____ the ship for off-loading.

Match the following terms to their synonyms. - 10 points

precise	adjust	building up, gathering	improve	delay
corrosion	scored	sediment	strainer	insulate

- with deep scratches:
- enhance:.....
- mechanical wear due to rust:.....
- accurate:.....
- a fine filter:
- accumulation:.....
- lag:.....
- regulate:.....
- deposit:.....
- wrap up or protect against heat or cold

Match the terms to the appropriate explanation. There are two extra terms. -10 points

specific gravity	cetane number	hydrogen sulphide	heating value	flash point	sulphur
ash content	viscosity	water and sediment	carbon residue	density	pour point

- A measure of the density or weight of the fuel. It also serves as a rough check on viscosity, carbon content and other qualities:
- Chemical element which can be very injurious to engine parts during combustion because it changes into acid:
- Unburned carbon during combustion which can deposit on engine parts:
- The temperature at which the fuel vapours ignite when they are exposed to a flame:
- The lowest temperature at which the fuel oil is observed to flow:
- An indication of the ignition quality of diesel oil:
- The amount of heat given off on complete combustion of one pound of fuel:
- Non-combustible solid material in the fuel which scratches the rubbing surfaces it comes in contact with:
- The measure of the resistance of the fuel to movement. The higher it is, the more difficult it is for the fuel to flow:
- Content in water and solid particles. The higher it is, the more possible it is to cause erratic combustion and corrosion:

Complete the following text with the words given. -15 points

injectors	piloting	hydraulically	fitted	function
injection	lack	efficient	disperse	combustion
insufficient	stalling	faulty	timely	distinguished

The last stage of the fuel oil system is the of the fuel in the combustion chamber. This is done by the fuel injectors, which are on the cylinder head. Their main is to inject and in a form of spray a certain amount of fuel in thechamber.

The normal burning of the fuel and the running of the engine depend on the precise and operation of the fuel Incorrect injection timing can cause the engine not to start or to be hard to start. It can also cause of power or cause the engine to produce white smoke, as there is temperature to properly burn the fuel. A injection pump can be the reason behind aengine or a rough running engine. Fuel injectors are into single atomizer and multi-atomizer injectors.

Most injectors are operated

In 4-stroke diesel engines, besides the main fuel injector, there may be a injector as well, fitted at the side of the cylinder cover.

Fill in the gaps with an appropriate word. The first letter is given. - 15 points

- Marine fuels come from c_____ oil.
- Water and thick particles sink down in the s_____ tank.
- The p_____ separates water and impurities from the fuel by means of centrifugal force.
- Each service tank has the c_____ to provide the engine with fuel for 24 hours.
- The procedure of taking sample of the fuel delivered by continuously drawing it throughout the bunkering operation is called d_____ sampling.
- The viscosity regulator measures the viscosity and adjusts the t_____ of the fuel in order to provide the correct viscosity for combustion.
- The b_____ tank is used to collect the recirculated fuel oil.
- The booster pump increases the p_____ of the fuel just before it is delivered to the engine.
- HFO is much cheaper than diesel, but it produces s_____ and dirtier e_____ gases.

