

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

Course: Maritime English
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FINAL EXAM

1. Fill in the gaps using the words below. There are two extra words. (20 p.)

salt changing low alignment neutralised complies exhaust
dew-point adjacent overflows retrofitting high upside
sulphur pressure tolerance centrifuging deposits attributed inlet
handling after-treatment

- Vanadium, in combination with sodium, may lead to _____ valve corrosion and turbocharger _____.
- If the crankshaft deflection (_____ indicator) is approaching the _____ limits, the bearing shells of the two _____ main bearings must be dismantled and inspected.
- Storing the LNG and _____ it on board are challenges, but the _____ is too good an opportunity to ignore. There's no _____ in natural gas, and if you apply the _____ pressure, Otto cycle engine, it also _____ with Tier III NOx limits without any _____.
- The formation of sulphuric acid can be _____ by maintaining the liner temperatures above the corresponding _____.
- Experience has shown that many of the bunker _____ and spillages that do occur can be _____ to human error.
- When _____ over from one tank to another, care should be taken to ensure that an excessive back _____ is not put on the hose or loading lines.
- Sodium is normally present in the fuel as _____ water contamination and may, as such, be removed by _____.
- The gas supply system is a significant cost barrier to _____ any gas engine, as is the tank which is substantially bigger than the equivalent fuel oil tank.

2. Complete the sentences using the correct derivative from the word given. (15 p.)

- Fuels which are produced on the basis of different crude oils tend to be (stability) when mixed.

- Marine fuel oils should be (**thorough**) cleaned to remove solid and liquid (**contaminate**).
- As heavy fuel oil is more (**viscosity**) than marine diesel oil, it cannot be pressed through the (**inject**) without proper treatment.
- The water (**separate**) ability of the fuel is ensured by limiting the (**dense**) for reasons of centrifuging.
- (**contain**) arrangements and available clean-up equipment should be taken into consideration by the companies when they produce the bunkering procedures.
- The sulphur content of a fuel has a (**neglect**) effect on the combustion process.
- Catalyst particles from the (**refine**) process as well as metals bound in the fuel are highly (**abrade**).
- A mixture of (**compatible**) fuels in the bottom tanks and the settling tanks may lead to (**stratify**).
- Owners and operators are taking (**decide**) now on how they will meet the financial and (**comply**) challenges.

3. When assessing the quality of a fuel, you must take into consideration a large number of standard properties that will determine its grade. For the following explanations of the most important parameters of fuel oils you are asked to supply the appropriate term. (20 p.)

- Content in water and solid particles. The higher it is, the more possible it is to cause erratic combustion and corrosion: _____
- 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: _____
- 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: _____
- The lowest temperature at which the fuel oil is observed to flow: _____
- An indication of the ignition quality of marine distillate fuels: _____
- Perhaps the most important parameter of marine fuels. It is related to fuel quality: _____
- The amount of heat given off on complete combustion of one pound of fuel: _____
- The temperature at which the fuel vapours ignite when a flame is applied to it: _____

4. Choose the correct option. (10 p.)

- The ___ the CCAI, the later the ignition takes place.
a. higher b. lower c. clearer
- The element which causes oxidisation to the engine is ___.

- a. carbon b. silicon c. sulphur

-- Crankshaft deflection readings should be taken at ___ different positions of the crankshaft by placing a ___ between the crankwebs.

- a. three b. five c. four
- a. dial gauge b. feeler c. file

-- Hard particles which are caught between the upper horizontal ring/groove surfaces will cause ___.

- a. peeling b. punching c. pitting

-- As gas fuel enters the combustion space and mixes with the combustion air, there is a risk of uncontrolled combustion called ___.

- a. blowing b. knocking c. hitting

-- The acronym CCAI stands for:

- a. calculated calcium aromaticity indication
- b. cracked carbon aroma index
- c. calculated carbon aromaticity index

-- LNG, as compared to HSFO, emits 99% less harmful ___ and provides a 20% reduction in greenhouse gases from the vessel stack.

- a. parts b. particulates c. particles

-- For efficient removal of water by means of a conventional purifier, the correct choice of ___ disc is of paramount importance.

- a. weight b. volume c. gravity

-- The acronym CFPP stands for :

- a. cold filter plugging point
- b. carbon filter plugging point
- c. cold filtration pressure point

5. Match the words to their definitions. There is one extra word. (10 p.)

implement expenditure catalyst residue breakthrough infrastructure

alternative conflict champion distract idle

- run slowly so that power is not used for useful work
- a substance which, without itself changing, quickens chemical processes
-
- sth that may be chosen instead of one or more others
- what is left
- support strongly
- the total amount of money smb spends
- systems which are necessary for the operation of a country/organisation
-

- take attention away from sth
- serious disagreement and argument
- put into force

6. Match the words to their opposites. There is one extra word. (10 p.)

forbid regular refuse loose slow simple
unlimited imprecision soft lose insufficient

- restricted
- complicated
- accept
- accuracy
- allow
- adequate
- rough
- tight
- rapid
- uneven

7. Write the factors which influence cylinder wear for each category. (15 p.)

CORROSION

1. _____
2. _____
3. _____
4. _____

ABRASION

1. _____
2. _____
3. _____