

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

Course: Maritime English

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Student's full name:

A.F.M.:

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FINAL EXAM

1. Fill in the gaps using the words below. There are two extra words. (25 p.)

*scuffing corrosion neutralised uncontrolled sodium silicon heavy
efficiency natural gas condense centrifuging complies flash-point
emission abrasive after-treatment contamination humidity particles
dew-point sulphur*

-- As _____ fuel enters the combustion space and mixes with air, there is a risk of _____ combustion called 'knocking'.

-- _____ is normally present in the fuel as salt water _____ and may, as such, be removed by _____.

-- _____ cylinder wear can be caused by hard _____ which enter the cylinder via the fuel oil and air, or it may be the result of _____.

-- The formation of sulphuric acid can be _____ by maintaining the liner temperatures above the corresponding _____.

-- _____ occurs mainly in engines burning _____ fuels, particularly with high _____ content.

-- There's no sulphur in _____ gas, and if you apply the low pressure, Otto cycle engine, it also _____ with Tier III NOx limits without any _____.

-- Depending on the temperature and _____ of the ambient air and the temperature of the seawater, water may _____ on the coldest air cooler tubes.

-- Wartsila started to develop low pressure gas engine technologies when it became obvious that _____ targets and competitive _____ efficiency cannot be reached with high pressure gas-diesel engines.

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

-- The systematic variation in _____ (**alkaline**) may produce uneven _____ (**corrode**) wear on the cylinder wall.

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

- The _____ (**convert**) of existing engines for dual-fuel operation will require _____ (**modify**) on the engine and could be completed during class docking.
- As heavy fuel oil is more _____ (**viscosity**) than marine diesel oil, it cannot be pressed through the _____ (**inject**) without proper treatment.
- In the marine business, the two-stroke dual-fuel _____ (**solve**) will become an attractive _____ (**alternate**) for companies looking for slow-speed engines.
- Owners and operators are taking _____ (**decide**) now on how they will meet the financial and _____ (**comply**) challenges.
- A mixture of _____ (**compatibility**) fuels in the bottom tanks and the settling tanks may lead to _____ (**stratify**).
- Because the _____ (**occur**) of the particles in the fuel oil is unpredictable, you should clean the fuel oil as _____ (**thorough**) as possible by centrifuging.

3. Find in the text synonyms for the following words/phrases. (15 p.)

- modifications
- stay away from
- chips
- period of time between two events
- conducted
- in advance
- preventive measures
- plentiful
- excessive
- suitable

Keep clear of space below crane with load.

Think out beforehand which way liquids, gases or flames will move, and keep clear.

Welding, or other work which causes spreading of grit and/or swarf must not be carried out near the engine unless it is closed or protected, and the turbocharger air intake filters covered.

All spares should be protected against corrosion and mechanical damage. The stock should be checked at intervals and replenished in good time.

Ample working light should be permanently installed at appropriate places in the engine room.

In case of oil mist alarm, precautions must be taken before opening the crankcase.

Whenever repairs or alterations have been made to moving parts, bearings, etc, apply the 'feel-over sequence' until satisfied that there is no undue heating (friction, oil-mist formation, blow-by, failure of cooling water or lubricating oil systems, etc).

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

optimise breakthrough lack legislation implement idle

catalyst upcoming conflict champion residue

- shortage
- serious disagreement and argument
- what is left
- set of laws
- a substance which, without itself changing, quickens chemical processes
- an important technological/medical discovery
- put into force
- about to happen
- make as perfect or as effective as possible
- run slowly so that power is not used for useful work

5. 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

6. The following verbs are frequently used in the instruction manual of a marine diesel engine. Complete the sentences regarding cylinder liner overhauling with a suitable verb. (10 p.)

scratch tighten dismount lift disconnect measure

turn check position grind

- _____ the oil pipes leading from the cylinder lubricator to the non-return valves.
- _____ the cylinder liner away from the cooling jacket.
- _____ the cylinder liner measuring tool.
- _____ the lubricating points of the cylinder by manually pumping cylinder oil to each lubricating point.
- _____ the clamps until they fit in the groove of the liner and _____ the screws.

- _____ the cylinder cover, the piston cleaning ring and the piston.
- Carefully _____ over any scores or marks and _____ away the wear ridges.
- _____ the cylinder liner with an inside micrometer.

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

CORROSION

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

ABRASION

1. _____
2. _____
3. _____