MERCHANT MARINE ACADEMY OF MACEDONIA
SCHOOL OF ENGINEERS

Course: Maritime English
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Instructors: A. Birbili, M. Tsompanoglou **Exam paper grade:**

FINAL EXAM

1. Complete the following guidelines on handling fuel oil using the following words: (15 p.)

exceed, overheating, differential, overlooked, contaminated, steady, filter, recommended, monitored, gravity, efficiency, grade, rate, unattended, choked

-- Ensure that the correct _____ disc is used.
-- Never _____ the flow _____ recommended for the centrifuge for the _____ of fuel in use. The lower the flow rate, the better the _____.
-- Centrifuging is still _____ for the distillate fuels, MDO/MGO, as the fuel may be _____ in the storage tanks.
-- The temperature at the purifier should be _____ – a typical optimum temperature is 98°C. Temperatures at storage, settling and service tanks should be _____ at least twice daily. _____ can degrade the fuel.
-- The importance of operating the settling and service drain test cocks is often _____, particularly in _____ engine rooms.
-- Fuel oil filters should be examined every few days in service – even if the _____ pressure gauges are normal. A _____ will often allow fuel to pass, even when partially _____. It can then suddenly choke completely.

2. Match the words from the list to their synonyms below. (13 p.)

insufficient, restrict, notify, excess, harm, dismantle, condensation, replenish, mandatory, contaminants, mountings, sounding, recommend

-- suggest:
-- cause damage:
-- limit:
-- pollutants:
-- inform:
-- compulsory:
-- fittings:
-- not enough:
-- more than necessary:
-- refill:
-- disassemble:
-- the process of steam turning into liquid:
-- the process for calculating the total quantity of fluid in a tank:

3. Complete the sentences with the correct form of the words in parentheses. (20 p.)

-- Slop _____ **(sound)** is 2 metres.
-- _____ **(condense)** can occur when warm air hits a cold surface.
-- Ejectors are _____ **(rely)** in operation, as they don't have any _____ **(move)** parts. This is why, _____ **(maintain)** is minimal.
-- The _____ **(clean)** of cooling water has to be checked.
-- You have to ensure satisfactory _____ **(lubricate)** from the very beginning.
-- Report _____ **(ready)** of the engine to the bridge.
-- Bilge water is pumped overboard, only when it is _____ **(sufficient)** clean.
-- You have to obtain _____ **(permit)** from the bridge to test main engine ahead and astern on air.
-- Are minimum of two _____ **(alternate)** running and in parallel?
-- Stop _____ **(add)** running generator.
-- Cat fines are highly _____ **(abrade).**
-- Check the _____ **(suitable)** of lube oil in the sump tank.
-- Homogenisers can also deal with _____ **(incompatible)** problems.
-- Sulphur is very _____ **(corrode),** because it turns into sulphuric acid.
-- The versatile _____ **(apply)** of marine water ejectors makes them an important part of a ship's engine _____ **(equip).**
-- According to MARPOL, bilge water must first pass through an oily water _____ **(separate)** before being discharged overboard.
-- CCAI 860 is _____ **(accept)** for slow speed engines.

4. Complete the sentences with an appropriate preposition. You can choose from the following: (12 p.)

below above before after

-- Call the Chief Engineer, if the revolutions of the main engine are …….. 90 per minute.
-- Temperatures _____ pour point can result in wax formation.
-- Water in the fuel should be removed _____ use.
-- Solid ash should be removed to the widest possible extent by centrifuging, and cleaning can be improved by installing a fine filter _____ the centrifuge.
-- The temperature is too high, 20 degrees _____ normal.
-- The preparation for departure checklist must be filled up _____ commencement of stand-by.
-- The level of cat fines should not exceed 15 ppm _____ the centrifuge.
-- Homogenisers installed _____ the fuel centrifuge can reduce the efficiency of the centrifuge.
-- The cat fines content should be reduced as much as possible, _____fuel oil reaches the engine.
-- Keep the fuel temperature _____ the minimum storage temperature, and the temperature _____ the final heater 5-10 C _____ the recommended fuel injection temperature.

5. Fill in the gaps with a suitable verb. The first letter is given. (15 p.)

-- **E**_____ that the correct grade of lub oil is being used. Take a sample at the purifier.
-- **W**_____ up the engine gradually using the circulating pumps to circulate the system.
-- **F**_____ up the fuel oil service tank with purified fuel oil.

-- **P**_____ up the starting air reservoirs to their maximum pressure and **d**_____ them of water.
-- **I**_____ Chief Engineer regarding arrival.
-- **S**_____ additional generator.
-- **M**_____ a visual inspection of the steering gear room.
-- **C**_____ over to high sea suction from low sea suction.
-- **E**_____ turning gear and turn engine for 10 minutes.

6. Match the questions to the answers. There is an extra question. (10 p.)

1. Which fuel can cause combustion deposits, especially when the engines run at low load?

-- Viscosity.

2. What causes fouling of the gasways?

-- Special lubricants with high TBN.

3. Which solid particles are particularly responsible for abrasive wear?

-- Ash.

4. Which parameter is not actually a measurement of HFO quality?

-- Fuel oil with high carbon residue.

5. What do engines designed for operation on high sulphur fuels use to minimise the effects of sulphur?

-- By centrifuging and a fine filter.

6. Which areas will suffer high wear if cat fines rates are not reduced?

-- Carbon residue.

7. How can you remove cat fines?

-- Fuel pumps and injectors, the liners and piston rings.

8. What can replace the traditional cylinder oil?

-- The pour point.

9. How can you remove vanadium deposits from turbocharger nozzle ring?

-- Cat fines.

10. Which fuel property determines the requirements for tank heating and transferring?

-- Blended lube oil.

11. Which parameter represents the incombustible components of fuel oil?

7. Choose the correct answer. (15 p.)

-- It is indicative of the ignition delay of residual fuels.
a) CCAI b) cetane number c) octane number

-- They are indicators of used lubricating oils in the fuel.
a) nickel and iron b) vanadium and silicon c) calcium, zinc and phosphorus

-- A highly toxic, flammable gas. Exposure to high vapour concentrations is hazardous.
a) sulphur b) hydrogen sulphide c) nitrogen dioxide

-- It indicates the ignition quality of distillate fuels.
a) octane number b) CCAI c) cetane number

-- The bilge system is a:
a) safety optional system b) non-safety system c) safety system required by law

-- It is used to indicate and assess the stability and cleanliness of a fuel.
a) total sediment potential b) carbon residue c) ash content

-- Depending on __ and trim we choose which bilge well the water is collected in.
a) ballast b) speed c) list

-- It indicates the coke-forming tendencies of a fuel.
a) sodium b) carbon residue c) sediment

-- A cleaning apparatus which separates oil from bilge water before it is pumped overboard.
a) purifier b) oily water separator c) strainer

-- The lowest temperature at which the fuel is observed to flow.
a) cloud point b) flash point c) pour point

-- It must be known for safe transport and storage and is set at 60° C (minimum value) as per SOLAS regulations.
a) flash point b) melting point c) boiling point

-- They indicate the presence of tiny particles of aluminium and silicon used in the refining process and carried over into the residual fuels.
a) acids b) cat fines c) sediments

-- In the bilge system, all suction lines are fitted with __ valves which do not allow the liquid to flow back to the bilge well.
a) non-return b) safety c) throttle

-- An extremely large tank where the bilge water is pumped into from the bilge well.
a) sludge tank b) holding tank c) drain tank

-- A pumping device which, in cases of emergency, discharges the bilge water right overboard.
a) air pump b) general service pump c) ejector

GOOD LUCK!!!