

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

**Course: Maritime English**

**Academic year: 2016 – 2017**

**Semester: D'**

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**Exam period: June 2017**

**Date:**

**Exam paper grade:**

**FINAL EXAM**

**1. Fill in the gaps using the words in the list below. There are two extra words. (15 p.)**

*drydocking overboard anti-heeling regulations discharge speed strainers well  
disperse trim choking centrifuging ejector separator suction ballast list*

- According to MARPOL \_\_\_\_\_, bilge water must first pass through an oily water \_\_\_\_\_ before being discharged \_\_\_\_\_.
- A homogeniser is used to \_\_\_\_\_ any water and sludge which could remain in the fuel after \_\_\_\_\_.
- During a(n) \_\_\_\_\_ operation at night, while at a shipyard in order to \_\_\_\_\_ the vessel for \_\_\_\_\_, it was discovered that the engine room was flooded.
- A(n) \_\_\_\_\_ creates a vacuum by the \_\_\_\_\_ of the water flowing through it.
- A(n) \_\_\_\_\_ system is used to minimise the list of the vessel in port.
- Bilge wells are always provided with \_\_\_\_\_ to prevent solid particles from entering the bilge pump and \_\_\_\_\_ it.
- All \_\_\_\_\_ lines are fitted with non-return valves which do not allow the liquid to flow back to the bilge \_\_\_\_\_.

**2. Fill in the gaps with a suitable word. The first letter is given. (15 p.)**

- Do not exceed a **p** \_\_\_\_\_ of 4 bars.
- Present **r** \_\_\_\_\_ of the main engine are 100 per minute.
- Present **o** \_\_\_\_\_ of the main engine is 1,000 KW.
- Have **i** \_\_\_\_\_ cocks been checked for water or oil leakage?
- Present **p** \_\_\_\_\_ of propeller is 90 degrees.
- **C** \_\_\_\_\_ over to high sea suction from low sea suction.
- **E** \_\_\_\_\_ turning gear and turn engine for 10 minutes.
- Slop **s** \_\_\_\_\_ is 2 metres.
- Are air start **c** \_\_\_\_\_ running and set on auto start (where applicable)?
- Make an examination inside the **c** \_\_\_\_\_ to make sure than no tools, cleaning rags or bars have been left inside.

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

- The \_\_\_\_\_ (**corrode**) effect of \_\_\_\_\_ (**sulphur**) acid is counteracted by adequate \_\_\_\_\_ (**lubricate**).

- The use of homogenisers is a good way to deal with \_\_\_\_\_ (**incompatible**) problems.
- You should check the \_\_\_\_\_ (**suitable**) of lube oil in the sump tank on a regular basis.
- CCAI 860 is \_\_\_\_\_ (**accept**) for slow speed engines.
- There was fast \_\_\_\_\_ (**deteriorate**) of the valve seats.
- Bilge water is not \_\_\_\_\_ (**exact**) water but a \_\_\_\_\_ (**mix**) or \_\_\_\_\_ (**vary**) of substances.
- Homogenisers installed before the fuel centrifuge can reduce the \_\_\_\_\_ (**efficient**) of the centrifuge and thus, the \_\_\_\_\_ (**clean**) of the fuel delivered to the engine.
- Ash is a solid \_\_\_\_\_ (**contaminate**) in the fuel.
- \_\_\_\_\_ (**impure**) in the fuel can cause damage to the fuel pumps.
- Obtain \_\_\_\_\_ (**permit**) from the bridge to test main engine ahead and astern on air.
- They use \_\_\_\_\_ (**add**) to improve lube oil quality and reduce the \_\_\_\_\_ (**possible**) of salt water contamination.
- N/A in the checklist stands for *not* \_\_\_\_\_ (**apply**).
- Cat fines can be very \_\_\_\_\_ (**harm**) to the engine components.
- A bilge well is the most important \_\_\_\_\_ (**residue**) collection tank of the entire engine room.

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

*replenish    precautions    compulsory    condensation    list    comply with*  
*versatile    fouling    trim    accumulate    sounding*

- obey a rule.....
- making dirty.....
- refill.....
- gradually increase in quantity over a period of time.....
- something that has to be done.....
- the process for calculating the total quantity of fluid in a tank.....
- of many uses.....
- preventive measures.....
- the difference between the fore and aft draughts.....
- the process of steam or warm air changing to liquid.....

**5. Complete the sentences with an appropriate preposition. You can choose from the following. (15 p.)**

*to    in    on    by    of    through    out    with    for*

- The cargo holds are usually provided \_\_\_\_\_ four bilge wells.
- The preparation for departure checklist must be filled \_\_\_\_\_ prior \_\_\_\_\_ commencement of stand-by.
- Decide whether the harbour manoeuvres should be carried \_\_\_\_\_ on diesel oil or \_\_\_\_\_ heavy fuel oil.
- Fuel is known to form deposits \_\_\_\_\_ hot spots, i.e. in the piston undercrown space.
- Bar the engine over \_\_\_\_\_ means \_\_\_\_\_ the turning gear.
- Some cylinder oil may leak \_\_\_\_\_ the stuffing box, down into the system lube oil sump.

- Ejectors are simple \_\_\_\_\_ design and reliable in operation and due \_\_\_\_\_ their excellent suction capability they are frequently used \_\_\_\_\_ various marine applications.
- Inadequately cleaned fuel oil could result \_\_\_\_\_ increased fouling of gasways.
- Depending \_\_\_\_\_ list and trim we choose which bilge well the water is collected \_\_\_\_\_.

**6. Match the following parameters tested in marine fuels to their definitions / explanations. There are two extra terms. (15 p.)**

density   kinematic viscosity   cat fines   base number   total sediment potential

flash point   hydrogen sulphide   heating value   cetane index   carbon residue

used lubricating oils   sulphur   ash   acid number   CCAI   pour point

water

- It indicates the tendency of a fuel to form coke. \_\_\_\_\_
- Calcium, zinc and phosphorous are considered “fingerprint” elements of these. \_\_\_\_\_
- They indicate the presence of tiny particles of the catalyst used in the refining process and carried over into the residual fuel. \_\_\_\_\_
- It is used to indicate and assess the stability and cleanliness of a fuel. \_\_\_\_\_
- It mainly affects fuel separation. It is used to convert volume to weight. \_\_\_\_\_
- The amount of heat given off on complete combustion of one pound of fuel. \_\_\_\_\_
- The percentage of this in the fuel can be translated into a corresponding energy loss. It may also cause corrosion in the fuel system. \_\_\_\_\_
- It contributes to air pollution. Its compounds can corrode cylinder liners and piston rings. \_\_\_\_\_
- It is indicative of the ignition quality of a residual fuel oil. \_\_\_\_\_
- A measure of the fluidity of a fuel at a certain temperature. \_\_\_\_\_
- An indication of the ignition quality of distillate fuels. \_\_\_\_\_
- It is expressed in degrees centigrade; it must be known for safe transport and storage. \_\_\_\_\_
- It represents the incombustible components present in a fuel oil. \_\_\_\_\_
- A highly toxic, flammable gas which can be fatal in extreme cases. \_\_\_\_\_
- It detects all acids present and if it is increased, it may indicate other harmful substances. \_\_\_\_\_

**7. 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 the 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?                                |   |

***GOOD LUCK!!!***