


<b>Merchant Marine Academy of Macedonia- School of Engineers</b>		
<b>Course: Maritime English</b>	<b>Academic year:2022-23</b>	<b>Exam period: February</b>
<b>Semester: D</b>	<b>Date: 10/02/23</b>	<b>Instructors: A. Birbili, E. Xenitidou</b>
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	<b>Exam paper grade:</b>	<b>Instructor's signature</b>

**1. Fill in the gaps with the following words. There is one (1) extra word. (15 points)**

**replenish/ rags/ versatile/ actuated/ impurities/ contaminated/ optimum/ gradually/ submerged/ contribute/ trim/ deterioration/ list/ impede/ thoroughly/ significant**

- During a ballast operation at night, while at a shipyard in order to ..... the vessel for drydocking, it was discovered that the engine room was flooded. Damage to ..... electrical equipment occurred.
- The ejector is a pumping device without movable parts (e.g. piston etc.) which is ..... by the high pressure of water flowing through it. The size of the ejectors may vary from 50 cm to more than a few metres, and their ..... application makes them a ..... part of ship's engine room equipment.
- Fresh water from heat exchangers, fresh water generators and boilers often ..... to the filling of bilge wells.
- Before starting up the engine: Warm up the engine ..... using the circulating pumps to circulate the system. Check the cleanliness of cooling water and ..... all cooling systems. Also, make an examination inside the crankcase to make sure that no tools, cleaning ....., devices or guide bars have been left inside. These might later ..... the motion of the running gear or obstruct any ducts or pipes.
- Fuel oils should always be considered as contaminated upon delivery and should therefore be ..... cleaned to remove solid/liquid contaminants before use. .... in the fuel can cause damage to fuel pumps and fuel valves and ..... of the exhaust valve seats. To obtain ..... cleaning, it is of utmost importance that the centrifuge is operated with as low a fuel oil viscosity as possible and that the fuel oil remains in the centrifuge bowl for as long as possible. Centrifuging is still recommended for distillate fuels, as the fuel may become.....in the storage tanks.

**2. Fill in the correct form of the word in capital letters. (10 points)**

- SATISFY ..... lubrication of the cylinders is important before starting the engine.
- Ballast is used to improve STABLE ..... of the ship and improve MANOEUVRE .....
- Sulphuric acid has a ..... CORRODE effect.
- Before starting the engine you must report READY ..... to the bridge.
- Ballast eductors can save VALUE ..... energy and power, depending on the application.
- Homogenisers can deal with COMPATIBLE ..... problems. If they are installed before the fuel centrifuge they can reduce the EFFICIENT ..... of the centrifuge and, thus, the CLEAN ..... of the fuel delivered to the engine. For this reason, installation of homogenisers before the centrifuge is not ADVISE .....

**3. Complete the word. The first letter is given. (15 points)**

- Pumps with large **c**\_\_\_\_\_ (1000 m<sup>3</sup>/hour) are installed between two tanks (one port side and one starboard).
- Fill up the fuel oil **s**\_\_\_\_\_ tank with purified fuel oil.
- We need more pressure. You must **r**\_\_\_\_\_ the pressure.
- Pump up the starting air reservoirs to their maximum pressure and **d**\_\_\_\_\_ them of water.
- Present **r** \_\_\_\_\_ of the main engine are 100 per minute.
- Depending on **l** \_\_\_\_\_ and trim, we choose which bilge well the water is collected in.
- Present **o** \_\_\_\_\_ of the main engine is 1,000 kilowatts.
- Are both Bell and **L** \_\_\_\_\_ books available?
- CCAI stands for *Calculated C* \_\_\_\_\_ *Aromaticity Index*.
- The bilge **h** \_\_\_\_\_ tank is a huge tank where bilge water is pumped into from the bilge wells.

**4. Match the sentences to the definitions. (10 points)**

It detects all acids present; if it is elevated it may be an indicator of other harmful components.		a) Cat fines
It is expressed in kilograms per cubic metre; it mainly affects the fuel separation.		b) Off spec fuels
Small particles of the catalyst (aluminium and silica oxides) used in the refining process and carried over into the residual fuel; they are porous, extremely hard, of irregular shape and abrasive in nature.		c) Sediment
It must be known for safe transport and storage and is set at minimum 60° C as per SOLAS regulations.		d) Lube Oil Blending on Board
A measure of the fluidity of a fuel at a certain temperature.		e) Ash
It consists of hydrocarbon sludge and is contained in all fuels; it is a parameter that is used to indicate and assess the stability and cleanliness of a fuel.		f) Density
It is expressed in degrees centigrade; is max 30°C; the lowest temperature at which the fuel will flow		g) Kinematic Viscosity
A new concept makes it possible to add additives to the engine system oil and then utilise it as cylinder lube oil.		h) Flash point
It represents the incombustible components of fuel oil.		i) Acid number
Products that do not meet the Quality Specifications.		j) Pour point

## 5. Underline the most appropriate word. (25 points)

- The temperature is too high. It is 30 degrees **above / below/ over** normal.
- Lack of **compliance/ observance/ adherence** to proper procedures led to the flooding.
- The water can be pumped straight overboard only when it is **sufficiently/ efficiently/ favorably** clean.
- The process of steam or warm water changing to liquid is **expansion/ accumulation/ condensation**.
- When something must be done, it is **optional/ compulsory/ sufficient**.
- Several suction lines are **condensed/ accumulated/ mounted** on a manifold.
- SOLAS states that the bilge-line arrangement, the ballast-line arrangement and the fire-fighting arrangement must be three independent systems, each being capable of taking **up/ in/ over** the work of the other if necessary.
- Vanadium deposits can be removed from the turbocharger nozzle ring **by centrifuging/ by using a grinding tool/ by using a fine filter**.
- As far as the bilge-line arrangement is concerned, governments and classification **societies/ organizations/ teams** have made up rules.
- One hour before arriving in port, you must shut and lock **sludge/ sewage/ garbage** direct overboard discharge.
- **Exhaust valves/ Fuel pumps and injectors, liners and piston rings/ The crankshaft and the camshaft** will suffer high wear if cat fines rates are not reduced
- The **strainer/ strum/ sludge** box is a kind of filter on the suction line head which prevents solid particles from entering the pumps and choking them.
- According to MARPOL regulations, the **rest/ remaining/ residue** of oil in the water that is pumped overboard must not exceed 15 ppm.
- The percentage of **water/ sulphur/ vanadium** in the fuel can be translated into a corresponding energy loss. It may cause corrosion in the fuel system.
- **Cetane number/ Octane number/ CCAI** is indicative of the ignition delay of residual fuels.
- During pre-departure preparations, you must check if the starting air **bottles/ valves/ compressors** are running and set on auto start (where applicable).
- The valves in the ballast arrangement must be **two-way/ non-return/ safety**, as the tanks must be able to be filled and emptied.
- Engines operating on high sulphur fuels use **homogenisers/ special lubricants with high TBN/ special lubricants with low TBN** to minimise the effects of sulphur.
- **Strum/ Distribution/ Main bilge** valve chest is the box which contains valves, each of which controls the flow of water from a bilge compartment or a bilge well.

## **BUNKERING – GOLDEN RULES**

- Always order fuel according to the engine maker's **proposal/ recommendation / prescription**, using the industry fuel oil standard ISO 8217. This **requirement / need/ rule** should be included in the **bill of lading/ charter party / document of compliance**. For each fuel category within ISO 8217 the characteristics are given as maximum **properties/ ideals/ values** with the exception of flash point and for this reason it is not sufficient to only refer to ISO 8217.
- The C/E should check that the bunkers to be loaded do not contain an **unacceptable / abundant / inadequate** amount of water. In the case of distillates, a simple test involving a dip tape and water finding paste can be used. For fuel oil this may not always be accurate, and a water test kit can be used. The kit is cheap and simple to use. If the bunker supply is from a **barge/ tug/ dredger**, the C/E should be wary if the supply is continually being circulated in the tanks.

**6. State whether the following sentences are True or False. (10 points)**

- ..... The bilge is the space where only rain water is collected.
- ..... The bilge system is optional.
- ..... The distribution valve chest is a kind of filter.
- ..... Rules for ballast are more stringent than the rules for bilge.
- ..... In bulk carriers, the holds can be used for ballast, if necessary.
- ..... After the ship has arrived in port, when the "finished with engine" order is given from the bridge, change over from engine control to bridge control.
- ..... The pitch of the propeller is measured in degrees.
- ..... Bilges are at the highest part of the ship.
- ..... Bilge water that has been cleaned by the separator can be thrown overboard, even if the ship is in port.
- ..... Strainers are filters.

**7. Match the words to their definitions. There is one (1) extra word. (15 points)**

**emerge/ obstruct/ disengage/ device/ dismantle/ miscellaneous/ carry out/ sounding/ comply with/ residue / strict/ excess/ accumulate/ ullage/ component/ commencement**

- block.....
- stringent.....
- disconnect.....
- come out.....
- perform.....
- obey a rule.....
- disassemble.....
- various, different.....
- start.....
- sediment.....
- more than is acceptable.....
- appliance.....
- part.....
- collect, gather.....
- sounding.....

