

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

**Course: Maritime English**  
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**Semester: E**  
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**Exam period: February**  
**Date:**

**FINAL EXAM**

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

*leakage loaded reference temperature viscosity extractor thermally intake*  
*measuring applications relief exhaust dilution pressure stringent extracted*  
*pneumatic*

- An oil mist detector consists of two tubes: the \_\_\_\_\_ tube and the \_\_\_\_\_ tube which has a connection for the oil mist \_\_\_\_\_ from the crankcase with the help of an electric \_\_\_\_\_ fan.
- The \_\_\_\_\_ governor is responsive to the air flow in the \_\_\_\_\_ manifold of the engine.
- Structural insulation is required to \_\_\_\_\_ separate the compartments within a ship.
- All products and \_\_\_\_\_ used in marine insulation are tested against \_\_\_\_\_ safety standards.
- The crankcase \_\_\_\_\_ doors are spring \_\_\_\_\_ valves which lift up in case there is any rise of \_\_\_\_\_ inside the crankcase.
- Fuel \_\_\_\_\_ into the lubricating oil system will cause \_\_\_\_\_ of the lubricating oil with a consequent reduction in \_\_\_\_\_ and lubricating properties.

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

*envelope trunks rapid ambient loss intact seize leaky fires*  
*portions pitch sparks coefficient size centrifuge slip complete*

- Propeller \_\_\_\_\_ is the displacement a propeller makes in a \_\_\_\_\_ revolution of 360 degrees.
- Hot spots can be created in the crankcase as a result of \_\_\_\_\_ entering the crankcase due to \_\_\_\_\_ piston rings, or as a result of \_\_\_\_\_ in the adjacent scavenge \_\_\_\_\_.
- The ship's \_\_\_\_\_ and heating and cooling systems should be designed for the extremes of \_\_\_\_\_ conditions.
- You must thoroughly \_\_\_\_\_ the fuel before using it and you must keep the filters clean and \_\_\_\_\_.
- Because the heat transfer \_\_\_\_\_ from water is much greater than from air, insulation must limit heat \_\_\_\_\_ to the water for the \_\_\_\_\_ of the hull that are below water level.
- \_\_\_\_\_ cooling may crack a cylinder liner and head or may cause a piston to \_\_\_\_\_ within a cylinder.

**3. Fill in the gaps with a word of your own choice. (20 p.)**

- When engines are stopped, you must \_\_\_\_\_ all starting-air lines, as serious accidents may occur if \_\_\_\_\_ is left on.
- When fuel reaches the \_\_\_\_\_ system, it should be absolutely free of \_\_\_\_\_ and foreign matter.
- One of the reasons for insulating the shells, \_\_\_\_\_ and decks of ships is to reduce \_\_\_\_\_ use for space heating and cooling.
- It is important to carry out routine \_\_\_\_\_ of the OMD to prevent \_\_\_\_\_ alarms.
- You must keep the engines clean at all times and take steps to prevent \_\_\_\_\_ or fuel from accumulating in the bilges or in other areas to prevent \_\_\_\_\_ hazards.

**4. Complete the sentences with the appropriate form of the words in parentheses. (15 p.)**

- Hold \_\_\_\_\_ (**ventilate**) are exposed to sea water and spray on deck and require proper \_\_\_\_\_ (**attend**).
- \_\_\_\_\_ (**prevent**) measures should always be taken during bunkering.
- When the temperature of steam falls below \_\_\_\_\_ (**permit**) limits, \_\_\_\_\_ (**condense**) takes place.
- Talking during exams is totally \_\_\_\_\_ (**accept**) behaviour.
- On \_\_\_\_\_ (**complete**) of the repair works, write a full \_\_\_\_\_ (**describe**) of the work done.
- Before a \_\_\_\_\_ (**decide**) is made to ventilate a space, it is necessary to consider the \_\_\_\_\_ (**require**) of the cargo, the temperature and \_\_\_\_\_ (**humid**) within the holds and outside and the \_\_\_\_\_ (**present**) or not of sea spray.
- The \_\_\_\_\_ (**sensitive**) of the oil mist detector should be checked on a regular basis.
- International regulations try to reduce the \_\_\_\_\_ (**emit**) of ships' fuels.
- The workers used a lot of \_\_\_\_\_ (**explode**) to demolish the old building.

**5. Write the opposites of the following words. (12 p.)**

- |                |                |
|----------------|----------------|
| -- legal       | -- possible    |
| -- responsible | -- equality    |
| -- efficient   | -- assemble    |
| -- manned      | -- compose     |
| -- balance     | -- important   |
| -- harmful     | -- appropriate |
| -- honest      | -- moral       |
| -- experienced |                |

**6. Match the words of column A to their synonyms in column B and write the correct pairs in the space provided. (9 p.)**

A	B
standing still; not moving	radiant
move in order to oppose	dependable
accumulate	attempt
suck in (esp. liquids) gradually	momentum
able to last, long-lasting	stationary
incongruous	absorb
effort	build up
vary between limits	counter
cause to break or burst	bulky
sending out light/heat in all directions	inverse
restricted	impact
the quantity of movement in a body	durable
opposite esp. in order or position	range
reliable	rupture
having great size or mass	limited
having a powerful influence on sth/smb	

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**7. Read the following article and answer the questions that follow. (14 p.)**

**You think crankcase explosions don't happen much anymore!  
Think again!**

At 6 a.m. on November 8, 2010, the second day of a voyage from Long Beach, CA to the Mexican Riviera, the 952-foot cruise ship Carnival Splendor experienced a fire in her engine room, knocking out all electrical power on the ship. Carnival reported shortly after the incident that a "crankcase split" had caused the fire, apparently the result of a crankcase explosion in one of the diesel engines.

The fire was extinguished by that afternoon and luckily none of the nearly 4,500 passengers and crew members onboard at the time was injured. The crew could not restore power to any of the engines and the ship had to be towed to San Diego over the next three days. Because of the power outage, the ship lacked food service, so passengers were fed rations delivered by U.S. Navy helicopters from the aircraft carrier USS Ronald Reagan. Carnival Splendor arrived in San Diego under tow around sunrise on November 11.

The Panamanian-flagged vessel was built by Fincantieri and entered service in 2008. Since the incident was in international waters, the flag state, Panama, initially led the casualty probe, with the U.S. Coast Guard assisting. Subsequently, for unknown reasons, the Panama Maritime Authority asked the U.S. to take over the investigation. The National Transportation Safety Board (NTSB) assigned staff to conduct the investigation, while Carnival's own engineers and representatives from both the shipyard and the engine manufacturer also investigated the incident. No definitive conclusions have yet been provided, although the focus remains on one of the diesel generators. Initial findings revealed that diesel engine number five in the aft engine room suffered a split of the crankcase and caught fire, damaging the engine control room and the electric cabling.

Carnival estimated that the cost of repairs, transport, refunds, free cruises given to displaced passengers, and the lost revenue from cancelled sailings would total \$65 million.

In a time when modern automation systems are supposed to prevent the above types of incidents from happening, these events are not rare. According to an eleven-year analysis of its classed fleet starting from 1990, Lloyds Register recorded 143 incidents of crankcase explosions, caused by bearing failures, piston failures, and other types of failures.

1. What was the cause of the fire and what damage did it cause?
2. How many casualties were there?
3. How long did it take the cruise ship to arrive in San Diego? And how did she arrive there?
4. Who conducted the investigation in the first place and why?
5. Who took over the investigation and why?
6. What did initial findings reveal?
7. As per Lloyds Register, what are the main causes of such incidents?