

Merchant Marine Academy of Macedonia
 School of Engineers
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Name:
 Student number:
 Exam paper grade:

FINAL EXAM (Retakes)

1. Supply the missing words from the ones given in italics (20 points)

trim, incidents, accident, pistons, genuine, load efficiency, centrifugal, rotors, draught, exhaust, wave, mist.

There were 5 reported of fire in a year but none of them resulted in

Ballast water is used to keep the ship's and within safe limits.

If a crankcase explosion occurs, the pressure may send a large amount of oil out in the engine room.

A air compressor is also called dynamic compressor.

The speed of the turbocharger is variable depending on the engine

In the double stage reciprocating air compressor, there are two for air compression.

The amount of useful energy that an engine can produce is dependent on 2 factors: the amount of fuel that can be burnt per cycle and the of the engine.

About 35% of the total heat energy in the fuel is wasted to the gases.

The nozzles were not spare parts.

A rotary air compressor is similar to the positive displacement configuration of a reciprocating compressor. Here, two spinning helical screws or are involved for compressing air.

2. Supply the missing past participles from the ones given in italics (15 points)

converted, worn, increased, evacuated, assembled, caused, scrutinized, detected, overheated, slowed down

When there is danger of explosion, the engine room should be

Fires in the scavenge spaces of diesel engines can be by worn mechanical components, faulty fuel injection, e.t.c

Once a scavenge space fire is, the engine should be, the fuel should be shut off from the affected cylinders, and the cylinder lubrication should be

The cause of the explosion was a(n) main bearing.

Fuel consists mainly of carbon and hydrogen. By burning the fuel in oxygen, the energy in the fuel is released and into work and heat.

All external scavenge space surfaces must be carefully

The crankshaft journal was badly

The crankcase relief valves were incorrectly

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

Water in the lube oil system may lead to (**corrode**)

Poor combustion can cause excessive of residues in the scavenging air chambers, which can cause fire. (**accumulate, viscosity**)

We took the for the fuel. (**sound**)

The tapered disk of the oil had to be replaced, because it was broken. (**separate**)

Scavenge fires can be very (**danger**)

..... are fitted in separate rooms for a reason: fire. (**purify**)

We had to add (**cool**) to the cylinder head in order to reduce excessive heat during (**ignite**).

A (**centrifuge**) air compressor is also called a dynamic compressor.

Ballast water helps the ship's (**stable**).

An air is an important mechanical device. (**compress**)

This is highly (**flame**) mixture.

4. Supply the missing words (15 points)

The turbocharger uses some of the energy of the e.....t gases. In an air c.....r, air is compressed by pulling in atmospheric air, reducing its volume and increasing its p.....e.

The diesel cycle has the highest thermal e.....y of any regular internal or external c.....n engine, due to its very high compression ratio.

Lubrication reduces f.....n between moving parts.

A basic part of the cycle of an i.....l combustion engine is the supply of fresh air and the removal of exhaust gases.

A c..... allows electricity to flow and an inductor stops electricity from flowing.

A 10 cylinder engine with a bore of 850mm and a s.....e of 2.35m must burn 1kg of fuel per revolution in order to deliver 38500 kW when running at 105 r..... per minute.

5. Match the words from the list to their synonyms below. (18 points)

malfunction, bypass, accumulation, unlagged, staff, defective, alloy, durable, insufficient, velocity, function, adjust

faulty: _____
 not enough: _____
 build-up: _____
 mix of metals: _____
 personnel: _____
 not insulated: _____
 speed: _____
 bad operation: _____
 strong, long-lasting: _____
 regulate: _____
 override: _____
 operation: _____

6. Turn the following sentences into Passive Voice. (12 points)

1. The piston compresses the air.
 _____ by the piston.
2. The chief engineer disengaged the turning gear.
 _____ by the chief engineer.
3. I will clean the valves tomorrow.
 _____ tomorrow.
4. You must use a scraper to remove scale.
 _____ to remove scale.
5. We must repair the crankshaft.
 The crankshaft _____
6. The second engineer has already replaced the piston rings.
 _____ by the second engineer.