

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

Course: Maritime English

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FINAL EXAM

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

bracing limits trial turbochargers wear firing

mandatory stiff readings airborne optional density

loosening excessively excitation failure resilient

- A new _____ order for the current production engines offers a better distribution of the _____ forces at certain harmonic orders.
- The _____ noise which is emitted from the engine is so high that in some cases the noise _____ for the engine room cannot be met.
- The _____ noted down in the log book can be compared to the design and _____ conditions in order to analyse the performance of engine room machinery and systems.
- In the compartments where the noise level is _____ high, the use of ear defenders is _____.
- In a 2-stroke marine propulsion engine, vibrations may cause _____ of internal components, _____ of holding bolts, and even _____ of the crankshaft.
- One end of the _____ is fitted at the upper part of the main engine, and the other end is attached to a very _____ location in the hull of the ship.
- The _____ are used to increase the air flow through the engine, and therefore the air _____.

2. Complete the following sentences with an appropriate word. In most cases the first letter is given. (15 p.)

- **B** _____ is a way of controlling vibrations.
- **F** _____ is the rate at which a sound (or electromagnetic wave) vibrates.
- The piston **s** _____ of a loop-scavenged engine is longer than that of a **u** _____-scavenged one.
- On 2-stroke engines, an electrically driven auxiliary **b** _____ is usually installed because the air provided at _____ engine speeds is not enough.
- With **s** _____, a large mass of air is supplied to the engine cylinder by blowing it under pressure.
- **S** _____ is the process of removing exhaust gases from the cylinder after _____ by blowing in fresh air.
- The log book parameters are checked during **s** _____ and investigations related to any kind of accident in the engine room.

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

- It is _____ (**advise**) to take local readings instead of remote readings.
- Vibration analysis is needed to predict the _____ (**operation**) health of rotating machines.
- As per MAN Diesel, noise _____ (**emit**) from 2-stroke engines can primarily originate from air and gas _____ (**pulse**) of the turbocharger, exhaust valves or fuel oil _____ (**inject**) systems.
- Ship machinery _____ (**install**) have two main sources of excitation: the main engines and the _____ (**propel**).
- High levels of vibration may cause _____ (**form**) or _____ (**break**) of the engine components.
- Amplitude and frequency are _____ (**measure**) parameters that are used to describe vibration.
- Comparing previous data of machinery parameters with current data can help us to plan maintenance work more _____ (**effect**).
- _____ (**satisfy**) scavenging depends on efficient _____ (**evacuate**) of exhaust gases and minimum _____ (**lose**) of fresh air through the exhaust _____ (**pass**).
- Vibration must not result in _____ (**comfort**) and _____ (**annoy**) to the crew.
- According to ISO criteria, vibrations of 4-5 mm/sec are tolerated, whereas values larger than 10 mm/sec are _____ (**accept**).
- Scavenging is important, because it affects the overall _____ (**efficient**) of the engine, the power output and the fuel _____ (**consume**).

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

for, above, on, with, into, up, in, at, through, from, within

- Insulation techniques are used to keep the vibrations _____ acceptable levels.
- Loop-scavenged engines are fitted _____ exhaust ports located just _____ the scavenge ports.
- The lube oil should be checked regularly _____ water and contaminants, as this combined with severe vibrations may speed _____ the damage process.
- Installing a permanent type vibration meter on critical machines can give us signs of wear and tear to be rectified well _____ advance before the fault converts _____ an expensive problem.
- The power output of an engine _____ a given speed is proportional to the mass flow rate of air.
- The following entries must be filled in the engine logbook:
 - the position of the ship _____ sea, _____ port or _____ anchorage.
 - speed of the ship _____ knots.
 - main engine rpm and load _____ the engine.
- In the engine room, there are many noise transmission paths _____ which vibrational energy is transferred _____ one area to another.

5. Match the following words to their synonyms. There is one extra word. (15 p.)

tamper breakdown counteract cavity velocity near miss resilient torsional
erratic detune aspirate deteriorate damp slacken aperture hazard

- a narrowly avoided accident:
- not regular, unpredictable:
- the speed of something in a particular direction:
- provide an ICE with air:
- rotational:
- loosen:
- failure (of engine):
- danger:
- balance with an equal force so as to make ineffective:
- change the frequency (of an oscillatory system) away from a state of resonance:
- able to return to an original shape after being pushed, stretched, bent, etc:
- make changes to something without permission:
- an empty space within a solid object, or between two surfaces:
- make worse:
- an opening, hole or gap:

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

turbine performance attenuate silicone integrates increase
mounting frequency crankshaft highlighted reduction breakdown
coupling turning silicon inertia fatigue

- If the engine has a power _____ connected to its crankshaft via a _____ gear, a flexible _____ is used to compensate for the vibration that occurs during motion transfer.
- When the natural _____ of vibration from an external source _____ with the engine vibration, the internal moving parts of the engine may be severely damaged.
- High levels of vibration may cause _____ damage to the engine.
- One type of torsional damper consists of a(n) _____ ring which is added to the _____ and is enclosed in a thin layer of _____ fluid.
- Elastomer-based _____ systems are used to suppress or _____ noise and vibration in ships.
- Unusual changes in the _____ of any particular machinery, sudden _____ or decrease in parameters, accidents, near misses, or _____ of any equipment should be noted down and _____ in the log book.

7. Match the words to make appropriate collocations. (5 p.)

-- running.....	seizure
-- bottom-end.....	inspection
-- piston.....	wing
-- remaining.....	crankpin
-- scored.....	hours
-- PSC.....	on board
-- track.....	soundings
-- bridge.....	frequency
-- natural.....	bearings
-- tank.....	record

GOOD LUCK!!!