

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

Course: Maritime English
Academic year: 2017 – 2018
Exam period: September 2018
Semester: B' (Retakes-Manila)
Instructor: A. Birbili

Name:
Student number:
Date: 17/09/2018
Exam paper grade:

FINAL EXAM

A. Put the words below in the right gap. There are two extra words. (15 p.)

scavenge rotor crankshaft B.D.C. T.D.C. running exhaust vanes diffuser
compression crown assembly combustion skirt crosshead pin silencer impeller

- The connecting rod is connected to the _____ with the crankpin.
- At the end of the 2nd stroke of a 4-stroke D.E. the piston is at the _____.
- In a 2-stroke D.E. two phases, _____ and _____, happen at the same time.
- The upper part of the piston is called _____ and the lower _____.
- The three upper rings of the piston of a 4-stroke diesel engine are _____ rings.
- The _____ connects the piston rod to the connecting rod.
- On the compressor's side of a turbocharger there is a _____ which contributes to further rising of the pressure of the compressed air.
- The two main parts of a turbocharger are the turbine _____ and the compressor _____.
- The turbine _____ has a stator, that is, stationary _____ which direct the exhaust gases to the rotor.
- The _____ absorbs the noise of the vibration of the _____ components of the turbocharger.

B. Complete the sentences with the correct form of the words in parentheses. (10 p.)

- Fin-stabilizers improve a ship's _____ (**stable**).
- The control systems on a shipboard boiler are designed to detect promptly _____ (**fail**) and malfunctions.
- Salt water, evaporated into steam and then brought into a condenser produces _____ (**condense**), which is fresh water.
- In a sewage _____ (**treat**) plant human body waste is treated _____ (**biology**) before being discharged into the sea.
- The 4-stroke D.E. has lower fuel _____ (**consume**) than the 2-stroke one.
- When the temperature of the steam falls below _____ (**permit**) limits _____ (**condense**) takes place.
- The main engines are used for the _____ (**propel**) of the ship.
- The decrease in pressure causes the _____ (**expand**) of the steam.

C. Put the words below in the right gap. (10 p.)

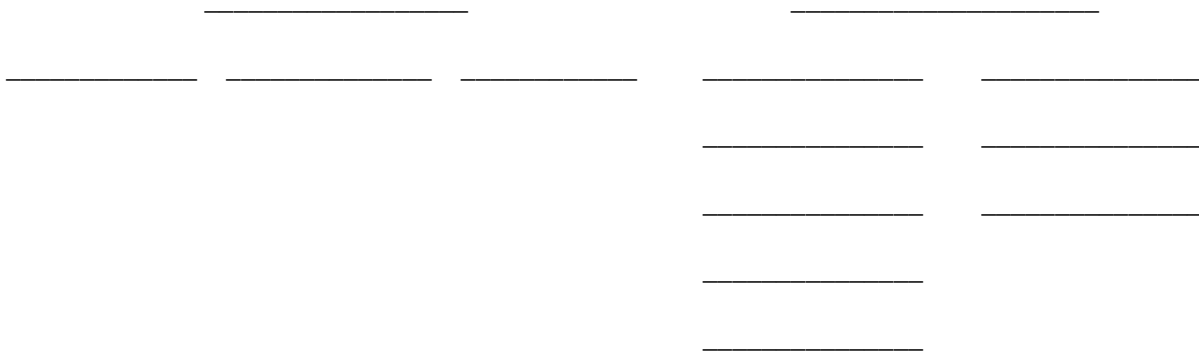
*nozzles water-tube boiling compression camshaft
tie rods internal power head fire-tube*

- There are two basic types of boilers: The _____ boiler and the _____ boiler.
- We can produce steam by heating water to its _____ point.
- The valve seats are housed on the cylinder _____.
- The cylinder block, the frame of the engine and the bedplate are connected together with the _____.
- In an impulse turbine the steam is directed from the _____ against the blades.
- Diesel engines are _____ combustion engines.
- The _____ actuates the valves.
- In a 2-stroke Diesel Engine the 2 strokes are called _____ and _____.

D. Complete the diagram on pumps by filling in the 13 gaps. The words you need are given below. (13 p.)

*lobe rotary double-acting diffuser centrifugal reciprocating volute
regenerative single-acting gear-wheeled vane-type displacement screw-type*

PUMPS



E. Match the following words to their synonym or explanation. There is an extra definition. (10 p.)

emission malfunction attemperator fireproof stationary gauge
evaporate inject charge combustion

- measuring instrument.....
- irregular or abnormal function.....
- apparatus which increases temperature.....
- fill up with air.....
- force liquid into.....
- fixed, not in motion.....
- turn from liquid into vapour.....
- not affected by fire.....
- discharge of gas, heat, radiation.....
- burning.....
- apparatus which decreases temperature.....

F. Which of the auxiliary machinery is used for... (12 p.)

You can choose from the following.

Oil-water separator fin stabilisers heater crane incinerator fans pumps generator

- reducing rolling of the ship?
- providing forced ventilation to holds?
- removing water and dirty particles from fuel?
- transferring liquids from one place to another?
- lifting heavy objects, containers, etc?
- supplying the ship with electrical power and lighting?
- burning the garbage?
- increasing the temperature of fuel and improving its viscosity?

G. Describe the second stroke of a four-stroke diesel engine. (12 p.)

.....

.....

.....

.....

.....

.....

.....

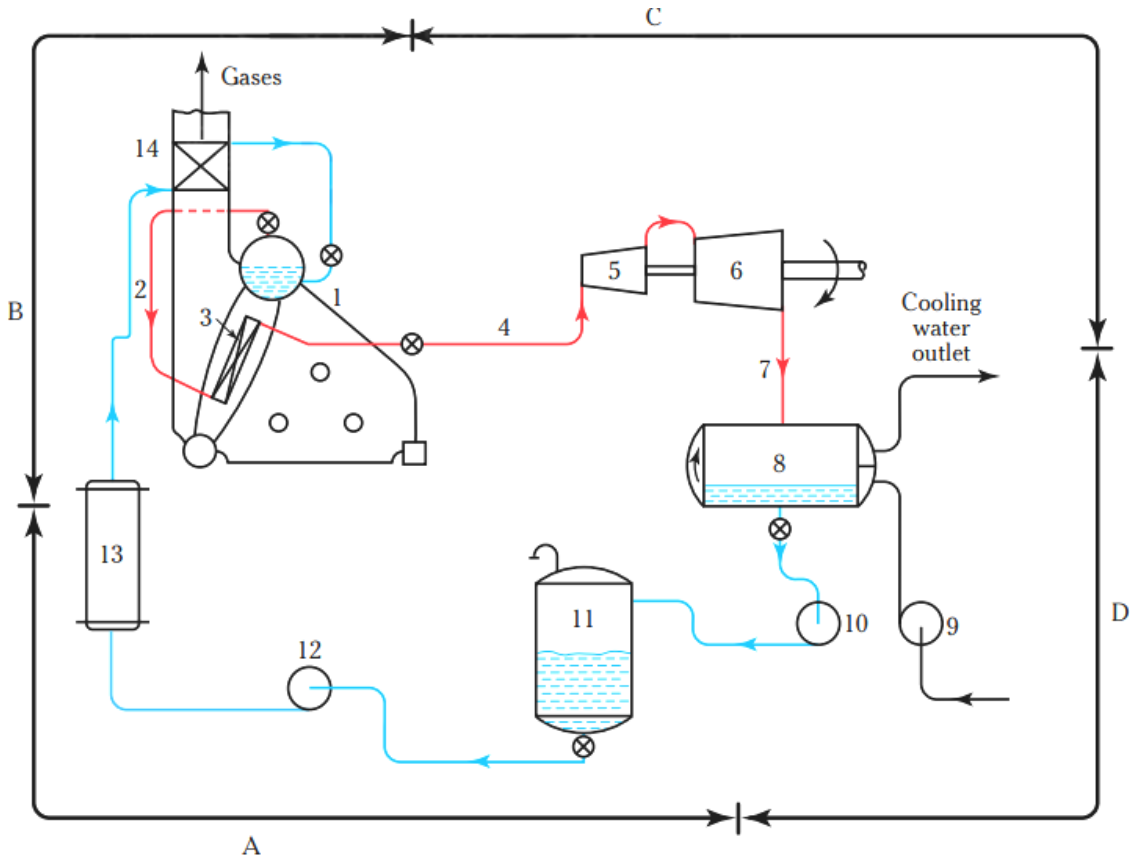
.....

.....

.....

H. The terms below are parts of a steam power plant of a reaction turbine. Write what is shown in the diagram. (18 p.)

- | | | | |
|----------------------|------------------------------------|------------------------|------------------|
| Economiser | Condensate pump | Boiler | Steam generation |
| Preheater | L.P. steam turbine | Superheater | Condensation |
| DFT | Feed pump | H. P. steam turbine | Feeding |
| Exhaust Pipe | Condenser | Superheated steam pipe | Expansion |
| Saturated steam pipe | Sea water cooling circulating pump | | |



1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
- A. _____
- B. _____

8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
- C. _____
- D. _____

GOOD LUCK!