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UNIVERSITI KUALA LUMPUR
Malaysian Institute of Marine Engineering Technology

FINAL EXAMINATION
JULY 2025 SEMESTER SESSION

SUBJECT CODE	:	**LMB23203**
SUBJECT TITLE	:	**MARITIME PROFESSIONAL ENGLISH**
PROGRAMME NAME (FOR MPU: PROGRAMME LEVEL)	:	**BACHELOR OF MARINE ENGINEERING TECHNOLOGY WITH HONOURS**
TIME / DURATION	:	**09.00 AM – 11.30 AM (2 HOURS 30 MINUTES)**
DATE	:	**17 DECEMBER 2025**

INSTRUCTIONS TO CANDIDATES

1. Please read **CAREFULLY** the instructions given in the question paper.
2. This question paper has information printed on both sides of the paper.
3. This question paper consists of **TWO (2)** sections; Section A and Section B.
4. Answer **ALL** questions in all sections.
5. Please write your answers in this question paper.
6. Answer **ALL** questions in English language **ONLY**.

THERE ARE 7 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

INSTRUCTION: Answer all questions.

SECTION A (Total: 40 Marks)

Text 1: Four-Stroke Medium-Speed Diesel Engine

EFFECT	CAUSE	WHERE TO LOOK	REMEDY
Engine refuses to start	1) No fuel	Supply tank Supply tank valve	Fill tank Open valve
	2) Starting air pressure too low	Starting air pressure gauge	Start air compressor; recharge reservoir
	3) Air in fuel line or pump	Fuel pump	Prime fuel pump; check line for leaks
	4) Injection nozzles not working	Nozzles	Remove injectors and clean; examine spring
	5) Compression low	Valves	Examine to see if seating properly
		Pistons	Examine piston rings; if supercharged, inlet filter could be dirty
	6) Viscosity of oil too high	Fuel tank	Put on heating steam; circulate fuel line
	7) Cylinder too cold	Cylinder cooling water pump	Cooling water may need heating
	8) Injection timing wrong	Fuel pump	Adjust
Engine starts on air but refuses to pick up firing	1) Valve open	Inlet exhaust valve	Free, if stuck
	2) Fuel system air locked	Fuel pipes	Prime fuel pumps and test
	3) Filter choked	Fuel filter	Turn on No.2 filter; clean No.1 filter
	4) Fuel injector filter choked	Fuel injector	Remove filter; fit spare filter
	5) Fuel pump set incorrectly	Fuel pump timing gear	Reset fuel pump
	6) Level of oil on service tank too low	Service tank gauge	Refill service tank and prime fuel pumps
Engine slows down or stops	1) Governor gear defective	Governor and linkage	Check setting of governor
	2) Fuel injector delivering too little fuel	Fuel pump Injector	Adjust Put in new injector
	3) Water in fuel oil	Filter	Turn on No.2 filter; clean No.1 filter
	4) Overloading	Gauges	Look at all gauges; reduce load
	5) Unequal load being developed in one cylinder	Exhaust temperatures	Adjust fuel supply to low cylinder; check injector nozzle and fuel pump delivery valve
	6) Stoppage of cooling water	Circulating pump	Regrind pump gland; reset heat exchanger thermostat

Engine runs fast	1) Governor gear out of order	Governor and governor links	Clean oil and reset; check connections
	2) Fuel pump not responding to governor	Fuel pump	Examine fuel pump to governor joint
Engine works irregularly	1) Governor gear out of order	Governor and linkages	Examine, clean and oil
	2) Water in fuel	Fuel filter	Change over filter
	3) Overloading	All gauges	Adjust where necessary
	4) Fuel pump valve leaking	Fuel pump	Delivery valve amy be stuck open
	5) Fuel pump sticking	Fuel pump	Check spring; clean pump punger
	6) Fuel delivery differs	Injectors	Adjust until all inject at same pressure

Answer these questions based on the chart. (20 marks)

1) What would happen if the valve from the fuel supply tank was not open?

_____

2) What would you do if the oil viscosity was too high?

_____

3) Where would you look to see if the starting air pressure was too low?

_____

4) When is it sometimes necessary to adjust the fuel pump?

_____

5) What would you do if one of the filters was choked?

_____

6) What may happen if the fuel pump is incorrectly set?

_____

7) What would you do if the level of oil in the service tank was too low?

_____

8) Where would you look if the engine was running too fast?

_____

9) What would happen if there was water in the fuel?

_____

10) Where would you look to see if the engine was overloaded?

_____

Text 2: Cooling The Engine

Due to the very high temperatures caused by the combustion of the fuel and the friction between the various moving engine parts, cooling of the engine is necessary to reduce wear and thermal deformation as a consequence of the constant expansion and shrinking of these engine parts.

The engine parts that require cooling are:

- The cylinder (liners and covers): the cylinder is cooled by injecting the coolant between the cylinder liner and the cylinder jacket. The most common coolant is fresh water.
- The piston: when the piston goes up and down, the coolant (oil) will enter through the piston rod bore and will leave through the inside return pipe;
- Exhaust valves and housings;
- Fuel halves, especially around the atomisers;
- The housing of the exhaust gas turbines;
- Crosshead guides and crosshead guide shoes.

Coolants

The coolants that are used in the cooling process are seawater, fresh water, oil and air. The advantages of seawater as a coolant are it is free of charge and can absorb a lot of heat. Furthermore, a seawater cooling-system can be made very simple since the used seawater can be discharged into the sea. The disadvantages of seawater are obvious, it contains a lot of minerals that will stick to all heated surfaces and form a deposit. This "*scale*", as it is called, must be removed, because it will form an insulation that will prevent exchange of heat. Seawater will also cause corrosion to the engine parts and piping. We do use seawater as a cooling medium in an indirect cooling process ("cooling the coolant"). Before the coolant will be circulated through the engine again, it is cooled with seawater by a heat exchanger. The seawater enters the ship through seawater inlets. These inlets are fitted with sea-chests that filter the water before it is led to the heat exchangers.

Fresh water has the ability to absorb much heat and will hardly cause any forming of scale. Compared to seawater, however, fresh water is very costly. Therefore, it is only used in closed circuits, so that it can be reused.

Oil as a coolant has a lot of advantages.
Apart from cooling, it will reduce engine-noise because the thickness of the oils will serve as a "muffler". Oil is anti-corrosive and has a purifying function (unwanted particles and impurities will be carried away by the oil). Another advantage is that the oil will form a thin sealing-layer that will seal off pits and scratches, and importantly, oil has lubricating function, which, in an engine with numerous moving parts, is a very important aspect. However, the amount of absorbed heat per cubic metre of oil is less that that of water. Oil may also cause carbon deposit on the surfaces that need cooling.

Air has the advantage of being free of charge. However, its disadvantage is the enormous amount of air needed to cool a small area or surface.

Fill in the advantage(s) and disadvantage(s) of the various coolants. (20 marks)

Cooling Medium	Advantage(s)	Disadvantage(s)
Seawater		
Fresh water		
Oil		
Air		

SECTION B (Total: 60 Marks)

QUESTION 1

Fill in the empty boxes with the right alphabet codes. (20 marks)

Letter	Code	Letter	Code
A	Alpha	N	11.
B	1.	O	12.
C	2.	P	13.
D	Delta	Q	14.
E	3.	R	Romeo
F	4.	S	15.
G	5.	T	16.
H	6.	U	Uniform
I	7.	V	17.
J	8.	W	18.
K	Kilo	X	X-ray
L	9.	Y	19.
M	10.	Z	20.

QUESTION 2

Fill in the blanks with the range and communication equipment required in the GMDSS – Areas A1, A2, A3 and A4. (10 marks)

AREA	RANGE	EQUIPMENT
A1	20 to 50 M	1.
A2	2.	VHF + MF
A3	3.	VHF + MF + One INMARSAT
A4	4.	5.

QUESTION 3

MV Utopia (call sign LXB3, MMSI No. 235 675 211) is on fire. Her position is 60° 21' N, 043° 71.2' E. Fire is detected in the superstructure. Fire cannot be extinguished by vessel's own equipment. There is danger that the vessel will explode. Crew consists of 19 members, 4 of whom were injured and 2 were missing.

MV Hubble (call sign DZVG) received the distress message and able to assist. Her position is position is 61° 45.6' N, 042° 15' E. Her speed is 15 knots and ETA to distress position is 15 minutes.

Based on the given situation, write the complete message, in full Phonetic Alphabets and Figure Code, on:

a) Initial Distress Call and Message

b) Acknowledgement

c) Assistance Information Message

d) Acknowledge Response

Provide your answer on the space given on the next page.

(30 marks)

a) Initial Distress Call and Message
b) Acknowledgement
c) Assistance Information Message
d) Acknowledge Response

END OF EXAMINATION PAPER