



UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION
JANUARY 2011 SESSION

SUBJECT CODE : FVB 10802
SUBJECT TITLE : DIESEL TECHNOLOGY 1
LEVEL : BACHELOR
TIME / DURATION : 9.00am – 11.00am
(2 Hours)
DATE : 03 MAY 2011

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.
 2. This question paper is printed on both sides of the paper.
 3. Please write your answers on the answer booklet provided.
 4. Answer should be written in blue or black ink except for sketching, graphic and illustration.
 5. This question paper consists of SIX (6) questions. Answer FIVE (5) questions only.
 6. Answer all questions in English.
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THERE ARE 2 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

INSTRUCTION: There are SIX (6) questions. Answer FIVE (5) questions only.

(Total: 100 marks)

Please use the answer booklet provided.

Question 1

The combustion phase of diesel engine operation is the period in which the high pressure diesel is first injected into the compressed air mass within the cylinder.

- a) What are the purposes of the compression stroke of diesel engine?
(7 marks)
- b) Explain briefly, how does it produce the mechanical energy?
(8 marks)
- c) What does a compression ratio of 16:1 mean?
(5 marks)

Question 2

- a). Draw the pressure-crank angle diagram to show the phenomenon of diesel knock.
(5 marks)
- b). Explain briefly the phenomenon of "Diesel knock".
(15 marks)

Question 3

Turbo-charging has been very common on large diesel engines for many years because this type of engine is particularly suit to pressure charging. Explain the advantages of using a turbocharger on a normally aspirated engine.

(20 marks)

Question 4

Why the inlet valve be kept open for a few degree of crank angles even when the piston is on the compression stroke? Assume that the engine under consideration is a high speed.

(20 marks)

Question 5

- a) Describe the factors that indicated the diesel engine faulty running. (10 marks)
- b) Describe the factors that indicated the excessive fuel consumption. (10 marks)

Question 6

- a) Explain the main features of common rail system for diesel engine. (10 marks)
- b) Compared the injection characteristics of conventional injection and common rail injection. (10 marks)

END OF QUESTION