



**UNIVERSITI KUALA LUMPUR
Malaysia France Institute**

**FINAL EXAMINATION
SEPTEMBER 2014 SESSION**

SUBJECT CODE : FVB40202
SUBJECT TITLE : TYRE TECHNOLOGY
LEVEL : BACHELOR
TIME / DURATION : 3.00 PM – 5.00 PM
(2 HOURS)
DATE : 2 JANUARY 2015

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 **TWO (2)** sections. Section A and B. Answer all questions in Section A. For Section B, answer three (3) question only.
6. Answer all questions in English.

THERE ARE 4 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.

SECTION A (Total: 40 marks)**INSTRUCTION: Answer ALL Questions.****Please use the answer booklet provided.****Question 1**

- a) Explain the meaning of load index and speed category symbol. (2 marks)
- b) Explain **ONE (1)** effect if a tyre does not have a speed rating. (4 marks)
- c) Explain **FOUR (4)** effects if the diameter of a tyre is changed more than 3% from original diameter of a tyre. (8 marks)
- d) Calculate overall tyre diameter and tyre circumference if the tyre size is 225 / 50 R 16. (6 marks)

Question 2

- a) Explain the term "static" wheel balancing. Support your answer with a diagram. (4 marks)
- b) Explain **ONE (1)** difference between static wheel balancing and dynamic wheel balancing (6 marks)
- c) List and explain **TWO (2)** types of wheel balancers and their operation. (6 marks)
- d) Explain the easiest method of checking static imbalance. (4 marks)

SECTION B (Total: 60 marks)**INSTRUCTION: Answer only THREE (3) Questions.****Please use the answer booklet provided.****Question 3**

- a) Explain **THREE (3)** methods of Tyre Plus Sizing to maintain the same diameter tyre assembly by using a larger wheel and lower tyre profile. Support your answer with a diagram. (8 marks)
- b) Explain **THREE (3)** advantages of Tyre Plus Sizing method. (6 marks)
- c) Explain **THREE (3)** disadvantages of Tyre Plus Sizing method. (6 marks)

Question 4

- a) Explain the **FOUR (4)** advantages of the cast and forged alloy wheels? (8 marks)
- b) Explain the meaning of wheel marking **7.5Jx16H2 ET35** as shown in **Figure 1**. (8 marks)

**Figure 1: Wheel Marking**

- c) Explain **TWO (2)** reasons why all manufacturers of wheels and tyres need to comply with standard dimensions as recommended by tyre and rim associations.

(4 marks)

Question 5

- a) **Figure 2** shows four (4) types of the irregular tyre wear. State the type of tyre wear, appearance. Explain **ONE (1)** possible cause and give a solution.

(16 marks)

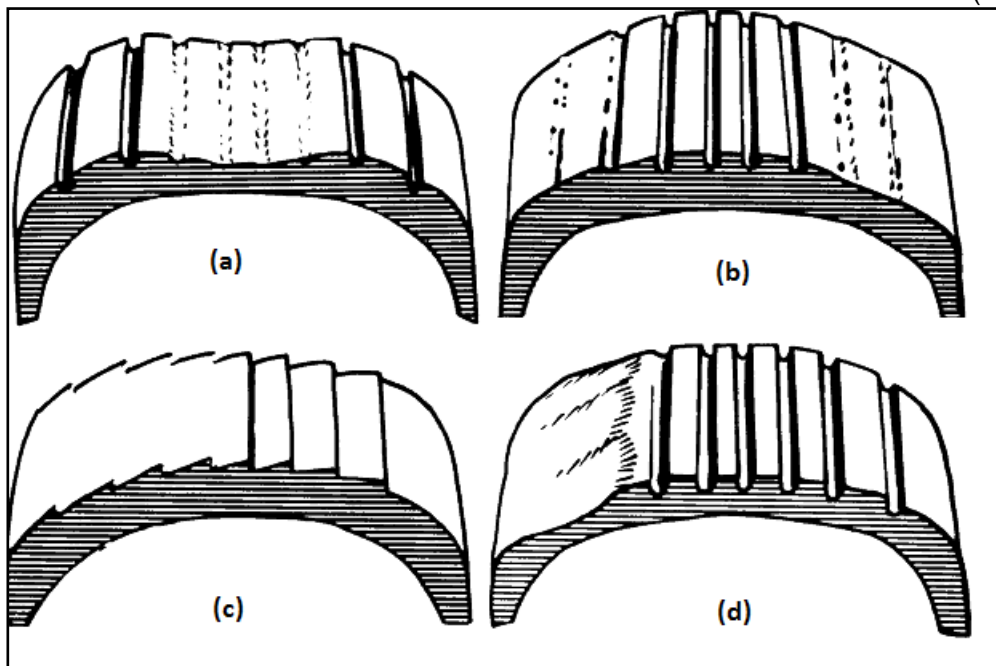


Figure 2: The irregular tyre wear

- b) Explain whether the source of a vibration comes from the front or the rear of a vehicle during a test drive.

(4 marks)

Question 6

- a) Explain **THREE (3)** of causes why a steering is shimmy and flutter?
(12 marks)
- b) Your friend complained to you where his tyres are wearing on the outside edges. Furthermore the alignment has been checked and all adjustments are within specifications. The technician at the alignment shop says this is normal. As an expertise in tyre and wheel servicing, explain **TWO (2)** causes of wearing on the outside edges.
(8 marks)

END OF QUESTION