



UNIVERSITI KUALA LUMPUR
MALAYSIA FRANCE INSTITUTE

FINAL EXAMINATION
JANUARY 2014 SEMESTER

SUBJECT CODE : FVB 11603
SUBJECT TITLE : TRANSMISSION
LEVEL : BACHELOR
DURATION : 2 HOURS
DATE / TIME :

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper **CAREFULLY**.
2. This question paper is printed on one side of the paper.
3. Please write your answers in the answers booklet provided.
4. Answers should be written in blue or black ink except for sketching, graphic and illustration.
5. This question paper consists of **ONE (1) section**. Answer **FOUR (4) questions only**.
6. Answer all questions in English.

THERE ARE 12 PRINTED PAGES OF QUESTIONS.

SECTION A (Total: 100 marks)

INSTRUCTION : Answer 4 question only

Please answer on question paper.

Question 1

a) Explain the power/drive train and List down **TWO (2)** types of drive train arrangement that are commonly used in vehicles nowadays.
(10 marks)

b) Explain the main differences between “part time four wheel drive” and “full time four wheel drive” system that are used in automotive industries?
(10 marks)

c) By referring to **Figure 1**, determine the entire parts that are numbered,
(5 marks)

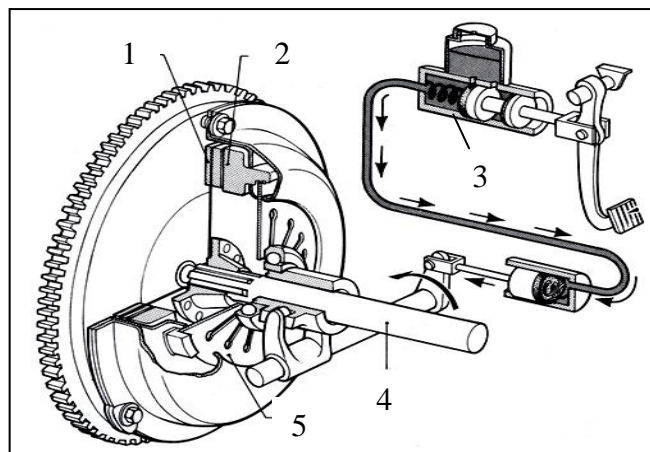


Figure 1. Hydraulic clutch linkage

Question 2

- a) Explain the purposes of constant velocity (CV) joint that is used in automotive drive train system?

(10 marks)

- b) List down the main components of rear wheel drive driveline and explain the main function of slip joint.

(10 marks)

- c) List down **TWO (2)** types of differential unit and explain the differences between these two units.

(5 marks)

Question 3

- a) Propose why does the front wheel drive layout is more suitable for a small car?

(10 marks)

- b) Evaluate the causes of CV-joint boot to crack and tear and give the reason for boot fail more often than the inner boot.

(5 marks)

- c) Justify when should you bleed the clutch hydraulic system and propose the procedure.

(10 marks)

Question 4

- a) Explain the functions of synchronizer unit in manual transmission.

(10 marks)

- b) By referring to the given information below:

Table1. Typical gear ratio

Ratio of 1 st speed	=	2.97:1
Ratio of 2 nd speed	=	2.07:1
Ratio of 3 rd speed	=	1.43:1
Ratio of 4 th speed	=	1.00:1
Ratio of 5 th speed	=	0.56:1
Ring gear	=	66 teeth
Pinion gear	=	18 teeth

- i) Calculate the overall gear ratio.

(10 marks)

- ii) If the vehicle is running in constant engine speed of 4000RPM in 5th speed and using the tire that has outer diameter of 66.5cm, calculate the output (wheel) speed of the vehicle, distance of travel and maximum speed (k/mh).

(5 marks)

Question 5

a) Explain the clutch drag / binding.

(10 mark)

b) Justify the factors that contribute to problem of clutch drag / binding.

(5 marks)

c) Explain the procedures on how to check the clutch drag / binding problem and the solutions of each factor that contributes to clutch drag / binding?

(10 marks)

END OF QUESTION