

Tertiary and Vocational Education Commission

NVQ Level 05 - Semester II		
Construction Technology		
Highway Technology - I		
F45C001M11	Three Hours	
* Answer any five (05) questions including question no. 01		

1. Attempt any TEN of the following:

(1) Define:

Classification of road in Sri Lanka

(2) Enlist types of Gradients.

(3) Define:

(i) Road carriageway (ii) Road shoulder

(4) Give five machineries use for road work?

(5) State the necessity of Good drainage (2 points).

(6) State two type of road pavements.

(7) State two characteristics of bitumen.

(8) Define the purpose of shoulder.

(9) Why compaction is necessary for the road construction.

(10) List various types of bitumen for Road construction.

(11) State the necessity of providing drainage to the Roads.

(12) State two causes of road failures.

(2 x 10 = 20 Marks)

2. Attempt following THREE questions:

- a. Define alignment and state the requirement of an ideal road alignment. (6 Marks)
- b. What do you mean by the **controlling of details** in the planning procedure? (6 Marks)
- c. Briefly explains the U.S method in road proposals. (8 Marks)

3. Attempt any THREE of the following INCLUDING part (a):

- a. Draw a cross section of flexible road and name the different layers (8 marks)
- b. Write the main functions of above layers. (6 marks)
- c. Discuss the merits and demerits of bitumen road. (6 Marks)
- d. List any four causes of Accidents. (6 Marks)

4. Attempt any THREE of the following INCLUDING part (a):

- a. Draw following road signs: (12 Marks)
 - i. Speed limit
 - ii. No parking
 - iii. Narrow Bridge
 - iv. Hair pin bend left
- b. Draw a neat labelled sketch of National Highway in Embankment. (4 Marks)
- c. Explain the types of hill road curve with neat sketch. (4 Marks)
- d. Draw neat sketch of hill road showing its components. (4 Marks)

5. Attempt following THREE questions:

- a. Express the advantage and disadvantage of road transport. (6 Marks)
- b. Briefly explain the penetration test (8 Marks)
- c. What is the purpose of doing the penetration test? (6 Marks)

6. Attempt following THREE questions:

- a. Describe stepwise construction procedure for water bound macadam (W.B.M.) roads. (8 Marks)
- b. Discuss the causes of failure in flexible and rigid pavements. (6 Marks)
- c. Explain the importance of any two of the following tests
 - i. Sieve analyses
 - ii. C.B.R test
 - iii. Flash point
 - iv. Stranded Procter compaction test (6 marks)