

School: SOE	Level: BE	Invigilator's Sign:
Program: BCE	Year/Part: III/I	Superintendent's Sign:
Subject: Transportation Engineering I (EG602CE)		Code No.

- i. Answers should be given by filling the Multiple-Choice Questions' Answer Sheet.
ii. The main answer sheet can be used for rough work.

Code No.

GROUP A (Multiple-Choice Questions)	[10x1=10]	Time: 20 Minutes
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- What is the width of pavement of 2 lane national highway?
 - 8.80 m
 - 3.00 m
 - 75 m
 - 7.00 m
- Design of horizontal and vertical alignments, super-elevation, sight distance and grades, is worst affected by:
 - width of the vehicle
 - length of the vehicle
 - height of the vehicle
 - speed of the vehicle
- Which of the following does not include in the phases of highway planning?
 - Financing
 - Showing the phasing of a plan in the five-year plan
 - Assessment of road length requirement
 - Preparation of master plan
- The design speed on a highway is 60kmph; calculate the super elevation if radius of curve is 150m and coefficient of friction is 0.15.
 - 0.15
 - 0.04
 - 0.038
 - 0.07
- The economical highway can be achieved by _____
 - More transport cost and less quality aggregate
 - Cheap aggregate
 - Good quality aggregate
 - Good aggregate and less transport cost
- The vertical alignment of a highway includes?
 - Highway lighting
 - Design of valley curves and gradients
 - Sight distance and traffic intersection
 - Widening of pavements coal
- The surface drainage doesn't consist of _____
 - Camber
 - Road side drains
 - Culverts
 - Curves
- The highest CBR number is required for _____
 - Pavement
 - Sub grade
 - Sub base
 - Base
- Bitumen is a by-product of _____
 - Wood
 - Petroleum
 - Kerosene
 - Coal
- The layer which is constructed above embankment is called _____
 - Sub grade
 - Fill
 - Base
 - Sub base

Multiple Choice Questions' Answer Sheet

Marks Secured: _____

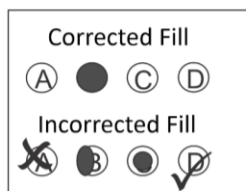
In Words: _____

Examiner's Sign: _____ Date: _____

Scrutinizer's Marks: _____

In Words: _____

Scrutinizer's Sign: _____ Date: _____



1. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D	6. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D
2. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D	7. <input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D
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Manmohan Technical University
Office of the Controller of Examinations
Exam Year: 2081, mangsir

School: SOE	Level: BE	Time: 3 Hours
Program: BCE	Year/Part: III/I	Full Marks: 50
Subject: Transportation Engineering I (EG602CE)		

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ The figures in the margin indicate **Full Marks**.
- ✓ Assume suitable data if necessary.

GROUP A (Multiple-Choice Questions in separate paper) **[10×1=10]**

GROUP B (Short Answer Questions - **Attempt Any Eight**) **[8×2=16]**

1. What are the major constraints on the development of Road Transportation in Nepal?
2. What are the requirements of ideal highway alignment?
3. List out the factors that control selection of highway alignment?
4. What are various elements of geometric design parameters of highway?
5. The width of the pavement is 7.0m. If the center line of the road has an elevation of 432.45m., find the elevation of the road at the edges of the pavement and at the center of the lane for Straight line camber is provided.
6. What are different highway drainage structures? Why are they needed?
7. What are river training structures and slope protection structures? Explain with examples of various structures.
8. What is meant by sight distance? Briefly explain important of Sight Distance in geometric design of pavements.
9. Enlist the various types of bitumen and its quality tests.

GROUP C (Long Answer Questions – **Attempt All Questions**) **[6×4=24]**

10. Explain Marshal test of bituminous mix design with neat diagram. **[4]**
11. The radius of a circular curve of two lane highway with a design speed of 70 kmph is 220m. Assuming extra widening is not necessary, calculate the length of the transition curve and shift of the curve. Assume other necessary data approximately. **[4]**
12. The speed of the overtaking and overtaken vehicles are 60Kmph and 30 Kmph respectively on a two-way traffic road. If the acceleration of overtaking vehicle is 1m/sec^2 . Calculate the following:
 - a. Safe overtaking sight distance
 - b. Minimum and desirable length of overtaking zone. **[4]**
13. The radius of a horizontal circular curve is 100 m. The design speed is 50 Kmph and the design coefficient of lateral friction is 0.15.
 - a. Calculate the super-elevation required if full lateral friction is assumed to develop
 - b. Calculate the coefficient of friction needed if no super-elevation is provided
 - c. Calculate the equilibrium super-elevation **[4]**
14. Briefly explain the surface and sub-surface drainage systems in pavements? **[4]**
15. Explain various classification of road Network in Nepal. **[4]**