Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME – SEMESTER II– EXAMINATION – WINTER - 2016

Subject Code: 2721307 **Date: 17/11/ 2016**

Subject Name: Economic Evaluation of Transportation Projects

Time: 2:30 pm to 5:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Discuss about stages involved in economic evaluation of transportation projects. **07**

(b) Explain in brief in the field of transportation: (i) Laws of demand, (ii) Elasticity of supply. **07**

Q.2 **(a)** Explain following in brief: (i) Utility, (ii) Ordinal Analysis. **07**

(b) Discuss about various methods of economic evaluation with their merits and limitations. **07**

OR

(b) What is Financial Analysis? Briefly explain methods of Highway Financing. **07**

Q.3 **(a)** What are the components of VOC? Also, write factors affecting VOC. **07**

(b) (i) Find monthly installment for the present worth of Rs. 8,50,000/- if annual rate of compound interest is 8.5% and time period of 8 years. **07**
(ii) Find the value of annual saving of Rs. 45,000/- for 7 years at 11% interest rate.

OR

Q.3 **(a)** In highway economic analysis, how transportation cost is derived? Also, state benefits from highway project. **07**

(b) The cost of improving an existing road 16 km long, is Rs. 22 lakhs per km. Details of costs with and without improvement are given in following table for a 5 years period after the completion of the improvement. Assuming a discount rate of 9%. Find out whether the project is economically justifiable? Use NPV and B/C ratio methods. **07**
All amounts are in Rs. Lakh in the table.

Year	RUC		Accident cost		Maintenance cost	
(t)	With Improvement	Without Improvement	With Improvement	Without Improvement	With Improvement	Without Improvement
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0	0	0	0	0	0	0
1	300.8	378.7	3.8	10.8	10.8	8.6
2	323.4	404.6	4	11.8	10.8	8.6
3	344.6	434	4.2	12.4	10.8	8.6
4	374.5	465.4	4.5	13.2	10.8	8.6
5	408	501.2	4.8	14.2	10.8	8.6

Q.4 **(a)** What are the factors on which National Income depends? Describe GDP and GNP. **07**

(b) What is BOOT? What is project appraisal? **07**

OR

Q.4 **(a)** Explain the methods of estimating National Income. **07**

(b) Describe various road project appraisal models with their applications and limitations. **07**

Q.5 **(a)** Discuss: (i) Consumer surplus, (ii) Shadow pricing. **07**

(b) How the economic evaluation of the Urban Mass Transportation Projects will be carried out? **07**

OR

Q.5 **(a)** What will you suggest for raising the funds for Urban Mass Transportation Projects? **07**

(b) Discuss about critical issues may arise in funding of transportation system. **07**

****