Seat No.: _____ Enrolment No.______

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Sem-III Regular Examination January 2011

Subject code: 731902

Subject Name: Transportation Economics & Project Evaluation

Date: 10 /01 /2011 **Time: 02.30 pm – 05.00 pm**

Instructions: **Total Marks: 70**

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

Q.1 **(a)** What is the importance of engineering economy? Differentiate between project evaluation and project formulation. **07**

(b) What are the elements of cost of projects? Differentiate between total cost, average cost and marginal cost of a project. **07**

Q.2 **(a)** What is inflation? What is the impact of inflation on cost on a project? How is it calculated? **07**

(b) A single lane road 60 km long is to be widened at a cost of Rs.6.00 lacs per km including all improvements. The cost of operations of vehicles on the single lane road is Rs.1.50 per vehicle km, where as it is Rs. 1.20 per vehicle km on improved facility. The average traffic may be assumed 3000 vehicles per day (VPD) over a design period of 20 years. The interest rate is 10% per year. The cost of maintenance is Rs. 6000 per km on the existing road and Rs.1000 per km on the improved road. Find out whether the improvement is worthwhile or not(find B/C ratio). **07**

OR

(b) **(i)** A company is offered an investment proposal to invest Rs. 5000000 to get a return of Rs. 2000000 for the first two years and Rs. 1000000 for the next 3 years. The rate of interest is 5% per year and 10% per year. Find out NPV and state whether the investment is feasible or not. **07**

(ii) The cost of construction of new facility is Rs. 300 crore at current price and is met with by raising loan from World Bank. What is annual payment of equal amount for 20 years to repay the loan, if the rate of interest is 8% per annum?

Q.3 **(a)** Write note on components of vehicle operating cost. **07**

(b) Explain various Economic Evaluation Models for economic evaluation of road projects. **07**

OR

Q.3 **(a)** Discuss the methods for raising funds for Urban Mass Transportation Projects. **07**

(b) Explain Annuity Method of investment. **07**

Q.4 **(a)** Enlist benefits from the replacement of Railway Level Crossing by Road Over bridge (ROB). **07**

(b) Which are the normal stages involved in process of economic evaluation? **07**

OR

Q.4 **(a)** Explain conceptual frame work for evaluation according to FHWA. **07**

(b) What are the components of National Income? Explain them and state their significance. **07**

Q.5 **(a)** Explain highway users' benefits. **07**

(b) Write note on multi-objective economic assessment method for economic evaluation of highway projects. **07**

OR

Q.5 **(a)** Explain Road Investment Decision Model (RIDM) for economic evaluation of road project. **07**

(b) Explain the terms: BOT,BOOT,BOLT, Vehicles of concessioners, GNP, **07**

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