cost Rs. 25 lacs each and have a 10 year life, and salvage value after 10 years of Rs. 1.5 lacs each. Operating cost include labor cost, at Rs. 500/veh-hr, maintenance cost at Rs. 20/veh-hr and cost of fuel, oil, tires etc. at Rs. 15/veh-km. Calculate the life cycle cost (present value) of adding this route and operating it for 10 years assuming an annual interest rate of 7.5%

5. Attempt any <u>two</u> parts of the following: 2×10=20

(a) What is the need of transport System Management? How this can be implemented in metropolitan cities. What are advantages and disadvantages of long term and short term planning? Give examples of short and long term planning assignments.

(b) What do you understand by intelligent transport system? How these may be useful in improving the transport system in India? Discuss its fields where these may be implemented?

(c) Explain the following:

(i) Bikeways

(ii) Median lanes

(iii) Design of side walks

(iv) Parking accumulation

(v) Terminal buildings in railways

—x—

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ECE-023

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 100657

Roll No.

(Sem. VI)

SPL. THEORY EXAMINATION, 2014-15

TRANSPORT SYSTEM AND PLANNING

Time : 3 Hours] *[Total Marks : 100*

Note: Attempt all questions. All questions carry equal Marks.

1. Attempt any <u>two</u> parts of the following: 10x2=20

(a) Enumerate the various fields of transportation and transportation system? Discuss the characteristics of Transportation System.

(b) How does the development of transportation facility affects the social and economic sector of a country?

(c) What are positive and negative aspects of growth of transportation system? Discuss them with relevant data.

2. Attempt any <u>two</u> parts of the following: 10x2=20

(a) Sketch the three fundamental diagrams of traffic flow. Derive the relation between maximum flow, jam density and free flow speed. Calculate the time mean speed and the space mean speed of the following observation:

Speed Range (m/sec.)	Volume (Veh./hr.)
10 – 12	12
12 – 14	18
14 – 16	24
16 – 18	20
18 – 20	14

(b) What are various types of Intermediate Public Transport modes? Under what circumstances these are best suited for a metropolitan city? What are advantageous of I PTs over MRTS.

(c) Give advantages and disadvantages of Light rail transit Bus Rapid Transit.

3. Attempt any <u>two</u> parts of the following: 2x10=20

(a) Enumerate factors influencing choice of mode and types of modal split models.

(b) In an area number of trips from zone i to j are 8,000 and two modal split models are available which has characteristics given below. Compute the trips made by bus and also find the fare collected by this mode. If fare of bus is restricted to 6 then find fare collected.

	tij^v	tij^w	tij^t	fij	∅j
Car	20	–	18	4	–
Bus	30	5	3	9	–
aj	0.03	0.04	0.06	0.1	0.1

(c) What do you understand by trip assignment model. When these are used. Also explain any two trip assignment models.

4. Attempt any <u>two</u> parts of the following: 2x10=20

(a) How does the transportation is affected by landuses? Describe the factors affecting transport landuse relationship and also different landuse models.

(b) What is purpose of project economic evaluation. How the total cost of a project is evaluated? On what factors road user cost depends?

(c) A proposed new bus route is expected to require 8 new buses and to operate a total of 66000 vehicle-km per year and 29000 vehicle-hrs per year. Buses