Name: **Enrolment No:**	UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: Traffic and Transport Planning - I **Semester: III**
Programme: Bachelor in Planning
Time: 03 hrs. **Max. Marks: 100**
Instructions:

SECTION A

S. No.	All Questions are compulsory	**Marks**	**CO**
Q 1	Discuss and define the role of pedestrian facilities in urban road infrastructure. Why these facilities should be part of urban road design code? Support your answer with sketches/graphs/diagrams.	**4**	
Q 2	How a Public Transport (PT) System plays an important role in urban mobility? Explain and define two Rail Based public transport systems. Support your answer with sketches/graphs/diagrams.	**4**	
Q 3	Discuss and define the following terms: Kerb, Median and Shoulder? Support the answer with sketches/diagrams etc.	**4**	
Q 4	Discuss and explain the two factors affecting the public transport demand in any urban area. Support the answer with sketches/diagrams etc.	**4**	
Q 5	What do you understand by Geometric Design of Roads? Discuss two major components of geometric design.	**4**	
	SECTION B		
	All Questions are compulsory		
Q 6	In two districts (district A with heavy rainfall and district B with light rainfall), major district road of WBM with gravel pavement, 9.50 m wide (for A) with median of 0.95 m and state highway of cement concrete with high type of bituminous pavement, 8.50 m wide (for B) with median of 3.50 m respectively. What should be the height of the crown with respect to the edges in both the cases? Given: Camber for cement concrete with high type of bituminous surface is 1 in 60 (1.7%) and for WBM with gravel pavement is 1 in 33 (3%). OR A City Traffic and Transportation Plan is needs to be prepared for a City with core population of 13.35 lakhs, a floating population of 1.25 lakhs and adjacent area population of 3.75 lakhs. The length of major road network in city is 175 km. No of NMT modes are 65000. As part of the study, following primary surveys are required,	**10**	

	Household surveys (1%), Speed and delay (35%), NMT survey (7%). Please calculate the survey cost to be incurred for survey agency with and without contingency of 3%. Given: Household survey cost per household sample – Rs 375, Speed and delay cost per km – Rs 465, NMT survey cost per km – Rs 375.		
Q 7	Define and explain following terms: Super Elevation and Passenger Car Unit or Equivalent Car Space. Mention their values also. Support the answer with sketches/diagram/maps etc.	**10**	
Q 8	What do you understand by Pavement? Discuss the types of pavements. Elaborate on the advantages and disadvantages of types of pavement. Support your answer with graphs/sketches/diagram.	**10**	
Q 9	Discuss and define the interchanges and grade separators. Explain the Trumpet type and Full clover leaf type of interchanges. Support your answer with graphs/sketches/ diagram.	**10**	
	SECTION-C		
	All questions are compulsory		
Q 10	"Cross Sections are the inherent components for development of any road project. Cross sections consist of all standard components such as median, carriage way/Motor Vehicle lanes, railing/physical barrier, footpath, cycle track, green belt, service lanes, street lights, utility lines and building lines etc. The arrangement of these components in ROW is always as per the requirement." Comment and Review the same. Discuss any 3 typical components of a Cross Section. Develop typical cross sections for 50 m, 60 m and 75 m ROW with and without Bus Stop. Candidate is expected to use information as per his knowledge potential. Examples/Cases/Sketches/diagrams/figures would also be appreciated.	**20**	
Q 11	"Information/data plays an important and critical role in preparation of any transport plan and traffic study. Specially, the primary information/surveys play a coherent role in analysis of the existing condition in any study." Comment and review the statement. Define and explain any 5 types of primary surveys be conducted for collection of primary data as part of any transport study. In brief, discuss the methodology to conduct Traffic Volume Count (at intersection) Survey and Household Survey. Support your answer with examples, graphs/sketches/charts etc. Citing cases would be appreciated. OR "Traffic Delineators, Road Markings, Traffic Calming Devices and Traffic Rotaries play an important role in delineating, streamlining and smooth movement of traffic." Comment and review the statement. Define and explain the types of traffic delineators, road markings and traffic calming devices. Discuss their role in urban	**20**	

	traffic engineering. Candidate is expected to use information as per his/her knowledge potential. Examples/Cases/Sketches/diagrams/figures would also be appreciated. Citing examples would be appreciated.		