Code No: RT31015 **R13** SET - 1

III B. Tech I Semester Supplementary Examinations, May-2018

TRANSPORTATION ENGINEERING – I

(Civil Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	What is the necessity of highway planning?	[3M]
	b)	Write about highway cross sectional elements?	[4M]
	c)	Write about PCU factors.	[4M]
	d)	What are highway materials? Explain.	[3M]
	e)	Write about various types of pavements.	[4M]
	f)	What is Overlay? Discuss about various types of Overlays.	[4M]

PART -B

2	a)	Write about various road patterns?	[4M]
	b)	Compare Nagpur & Bombay Road development plans?	[8M]
	c)	What are the differences between good and improper alignment?	[4M]
3	a)	Discuss the design factors of horizontal alignment.	[3M]
	b)	Calculate the safe stopping distance for design speed of 50kmph for two-way traffic on a two lane road. Assume coefficient of friction as 0.35 and reaction time of driver as 2.5seconds.	[8M]
	c)	The design speed of highway is 90kmph and radius R=200m. Check for safety.	[5M]
4	a)	Discuss the relation between parameters of Traffic-Volume, Speed and Density.	[8M]
	b)	Discuss the guidelines of IRC method of Signals.	[8M]
5	a)	Write about Aggregate Impact Test.	[8M]
	b)	Write about Marshall Mix Design.	[8M]
6	a)	Compare various aspects of flexible and rigid pavement.	[8M]
	b)	Calculate the stresses at the corner and edge regions of a cement concrete pavement using westerguard equations with the following data. • Radius of relative stiffness (l)=20cm • Wheel load (P)=4500 kg • Modulus of elasticity of cement concrete (E) =3x10^5 kg/cm2 • Pavement thickness (h) =18cm • Modulus of sub grade reaction (k)=6.0 kg/cm3 • Radius of contact area (a)=15cm	[8M]
7	a)	Write the construction process of bitumen pavement.	[8M]
	b)	Discuss about various failures of rigid pavements	[8M]

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