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B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

August 2024 Supplementary Examinations

Programme: B.E.

Branch: Civil Engineering

Course Code: 20CV6PEPMC

Course: Pavement Materials and Construction

Semester: VI

Duration: 3 hrs.

Max Marks: 100

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I			CO	PO	Marks
1	a)	List the properties of aggregates and discuss any two laboratory tests on aggregates briefly.	<i>CO1</i>	<i>PO1, PO2</i>	08
	b)	Discuss the graphical method of blending aggregates for the preparation of bituminous mix.	<i>CO1</i>	<i>PO1, PO2</i>	08
	c)	Mention the gradation size of aggregates used for a bituminous concrete mix as per MoRT&H specifications.	<i>CO1</i>	<i>PO1, PO2</i>	04
UNIT - II					
2	a)	List the tests on Bitumen and Discuss any two laboratory test briefly as per IRC standards.	<i>CO1</i>	<i>PO1, PO2</i>	08
	b)	Discuss the procedure of determining the stripping characteristics of a bituminous mix layer by using Immersion Wheel Tracking equipment.	<i>CO1</i>	<i>PO1, PO2</i>	08
	c)	Differentiate between Cutback and Emulsion with one example.	<i>CO1</i>	<i>PO1, PO2</i>	04
UNIT - III					
3	a)	Enumerate the steps involved in the determination of Optimum Binder Content by Marshall Stability test.	<i>CO2</i>	<i>PO1, PO2, PO3</i>	08
	b)	A mixture having the following composition had a compacted weight of 2.30 g/cc. Calculate the void content of the mixture. Coarse aggregate=65% with specific gravity of 2.72, Fine aggregate=30% with specific gravity of 2.66, Asphalt=5% with specific gravity of 1.00.	<i>CO2</i>	<i>PO1, PO2, PO3</i>	08
	c)	Differentiate between Open textured and Dense textured mixes with one example.	<i>CO2</i>	<i>PO1, PO2, PO3</i>	04
		OR			

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

	4	a)	List the Marshall properties and define them with usual notations. Also mention the IRC specifications for a bituminous mix.	CO2	PO1, PO2, PO3	08
		b)	The aggregates in the bituminous mix are mixed with 10% asphalt by weight of mixture. The specific gravity of asphalt is 1. Compacted specific gravity of voidless specimen of this mixture is 2.3. Determine the specific gravity of the aggregate.	CO2	PO1, PO2, PO3	08
		c)	Define SuperPave. Mention any four advantages of a SuperPave mix.	CO2	PO1, PO2, PO3	04
		UNIT - IV				
	5	a)	List the equipments used for Excavation and Compaction in highway construction. Draw neat sketches of any two excavating equipments.	CO3	PO1, PO2, PO3	10
		b)	Discuss the construction procedure of a subgrade for a highway on an embankment as per IRC standards.	CO3	PO1, PO2, PO3	10
		UNIT - V				
	6	a)	Discuss the steps of constructing Bituminous Concrete layer as per MoRT&H specifications.	CO4	PO1	10
		b)	List the different types of joints in Cement Concrete pavements. Discuss any two types with neat sketches.	CO4	PO1	10
		OR				
	7	a)	Discuss the steps of constructing Bituminous Macadam layer as per MoRT&H specifications.	CO4	PO1	10
		b)	Enumerate the steps of constructing Cement Concrete Pavement as per IRC specifications.	CO4	PO1	10
