Q. Code: 446820

Reg. No. | | | | | | | | | | | | | | |

B. E / B. TECH.DEGREE EXAMINATION, MAY 2023

Seventh Semester

CE18013-PAVEMENT ENGINEERING

(Civil Engineering)

***(Regulation2018*)**

TIME:3 HOURS **MAX.MARKS: 100**

CO1 After successful completion of this course, the students will be able to:
Differentiate stress distributions in flexible and rigid pavements

CO2 Design flexible pavements.

CO3 Design rigid pavements.

CO4 Describe causes of distresses in flexible and rigid pavements.

CO5 Enumerate soil stabilization techniques for pavements, testing and field control.

PART- A (10x2=20Marks)

(Answer all Questions)

		CO	RBT LEVEL
1	Expand: AASHO; FHWA.	**1**	**1**
2	Illustrate Optimum Moisture Content for a soil.	**1**	**2**
3	How Reclaimed asphalt pavement (RAP) is laid?	**2**	**3**
4	What is meant by 'Long Life Pavement'?	**2**	**1**
5	Differentiate construction joint and contraction joint in cement concrete pavement.	**3**	**3**
6	What is meant by 'mud pumping'?	**3**	**1**
7	What do you meant by pavement management system?	**4**	**2**
8	How pot holes are formed?	**4**	**3**
9	Compare stabilization with consolidation of soil.	**5**	**3**
10	What is meant by reflective cracks in pavement?	**5**	**2**

PART- B (5x 14=70Marks)

		Marks	CO	RBT LEVEL
11(a)	Compare flexible pavement and rigid pavement in detail. Draw necessary diagrams.	**(14)**	**1**	**3**
	(OR)			
11(b)	Explain CBR method of flexible pavement design in detail. Draw necessary diagrams.	**(14)**	**1**	**3**
12(a)	Prepare a list of factors influencing flexible pavement design and explain wheel load repetitions in detail.	**(14)**	**2**	**2**

(OR)

12(b)	How flexible pavement design for rural road is different from a national highway? Write a brief note on that.	**(14)**	**2**	**2**
13(a)	Interpret the following terms: (a) Radius of relative stiffness (3 marks) (b) Equivalent radius of resisting section (4 marks) (c) Concrete roads and their scope in India (4 marks) (d) Design life of rigid pavements (3 marks)	**(14)**	**3**	**2**

(OR)

13(b)	List out various layers in a rigid pavement and explain the role of each.	**(14)**	**3**	**2**
14(a)	How structural evaluation is done for flexible pavement using Benkelman beam? Explain with neat sketches.	**(14)**	**4**	**3**

(OR)

14(b)	List the distresses in the flexible pavement surface. For any two distresses, state the causes and rectification procedures.	**(14)**	**4**	**3**
15(a)	Discuss the problems in stabilization of: (a)Black cotton soils (b) Desert sands. Suggest suitable method of stabilization in the above cases.	**(14)**	**5**	**2**

(OR)

15(b)	Explain the concept of Fuller's formula with a numerical example.	**(14)**	**5**	**2**

PART- C (1x 10=10Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16	How flexible pavement is designed using IRC:37-2018 (latest code)? Write shortly in steps.	**(10)**	**2**	**3**

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