Code No: **R164101J** **R16** **Set No. 1**

IV B.Tech I Semester Supplementary Examinations, July/Aug – 2021

PAVEMENT ANALYSIS AND DESIGN

(Civil Engineering)

Time: 3 hours **Max. Marks: 70**

Question paper consists of Part-A and Part-B
Answer ALL sub questions from Part-A
Answer any FOUR questions from Part-B

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PART–A *(14 Marks)*

1. a) Define AADT. [2]
   b) Differentiate between rigid and flexible pavements. [3]
   c) Define modulus of subgrade reaction. [2]
   d) Define runway. [2]
   e) What is the basic concept in prestressed cement concrete pavement? [2]
   f) What are the main functions of sub-surface water system? [3]

PART–B *(4x14 = 56 Marks)*

2. a) What are the functions of the individual layers of flexible pavements? [7]
   b) Explain how design traffic is calculated from the data obtained from traffic surveys. [7]

3. a) Write the details of experiments on vibration related VPI for structural evaluation of pavement by steady state vibratory loading. [7]
   b) Discuss the application of Burmister's two layer theory in pavement design. [7]

4. a) What are the uses of rubber modified bitumen? [7]
   b) Explain Hveem's method of bituminous concrete mix design. [7]

5. a) What are the salient features of thickness design of asphalt pavement as per the Asphalt Institute method? [7]
   b) Explain IRC method of flexible pavement design. [7]

6. a) Briefly write the details of calibrated Mechanistic- Empirical design process. [7]
   b) Write the suitability of providing continuously reinforced concrete pavements. [7]

7. a) State the thickness design specifications for flexible shoulders. [7]
   b) Explain the design criteria for design of drainage or filter layer of pavement. [7]