

Birla Institute of Technology & Science, Pilani- Pilani Campus

First Semester 2023-2024

Mid Semester Exam

Course No: CE G522

Nature of Exam: Closed Book

Duration: 90 Min

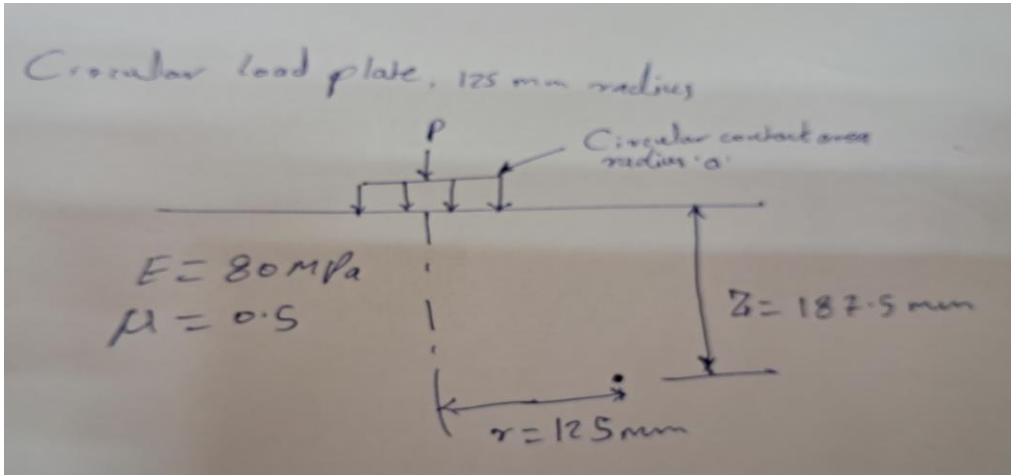
Course Title: Pav. Des. Main. Mang.

Max. Marks: 50 (Weightage: 30%)

Date of Exam: 02/12/2023

Note:

1. All questions are compulsory.
2. Figures to the right indicate full marks
3. Assume suitable data from the relevant code if necessary

Q 1	Explain the factors influencing the strength of the soil [9]
Q 2	Explain the bitumen constituents [6]
Q 3	Explain the requirements of bituminous mixes [11]
Q 4	<p>Estimate the vertical stress, radial horizontal stress, tangential horizontal stress, vertical radial shear stress, vertical strain, radial horizontal strain, tangential horizontal strain and vertical deflection for the one-layer pavement system shown in the figure [12]</p> 
Q 5	<p>By using the following data, design the economical flexible pavement section by following the IRC 37:2018 guidelines.</p> <p>Design Traffic: 150 msa Surface layer: Bituminous concrete Binder Course: Dense bituminous macadam Base layer: Wet mix macadam Sub-base layer: Granular sub-base Subgrade CBR: 8% Location of Road: Rajasthan Volume of air voids in DBM mix: 4% Volume of effective bitumen content in DBM mix: 10.5%</p> <p align="right">[12]</p>