



Malaviya National Institute of Technology Jaipur
Department of Computer Science Engineering
Computer Graphics Lab CSL310
Mid-Sem Evaluation (Group A1), Date: Feb 19, 2024

Time: 9:00am - 11:00am

Spring 2024, VI Semester

Max marks: 20

All questions are mandatory. You can use Google Search to look up syntax, but not AI tools like ChatGPT.

1. (a) Prove that 2D rotation and scaling commute if $s_x = s_y$ or if $\theta = n\pi$ for integral n , and that otherwise, they do not. You have to prove it theoretically. (5)
- (b) Then experimentally write a code proving the same for the test grayscale image. (5)

2. (a) Determine a sequence of basic linear transformations that are equivalent to a y -direction shearing matrix. (5)
- (b) Prove these sequences are equivalent to shearing by performing these transformations on the test grayscale image. (5)

*****Best wishes*****