Malaviya National Institute of Technology Jaipur
Department of Computer Science Engineering
Computer Graphics Lab CSL310
Mid-Sem Evaluation (Group A2), Date: Feb 21, 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) Write the 2D rotation matrix that rotates by 90 degrees clockwise. Write this matrix as a product of three shear matrices. (Hint: Peath Decomposition) **(5)**

   (b) Prove these sequences are equivalent to rotation by performing these transformations on the test grayscale image. **(5)**

2. (a) Prove that the multiplication of transformation matrices for each of the following sequence of operations is commutative:
   Two successive rotations
   Two successive translations
   Two successive scalings **(5)**

   (b) Then experimentally write a code proving the same for the test grayscale image. **(5)**

Best wishes