



Malaviya National Institute of Technology Jaipur  
Department of Computer Science Engineering  
**Computer Graphics Lab CSL310**  
Mid-Sem Evaluation (Group A4), Date: Feb 22, 2024

Time: 2:00pm - 4:00pm

Spring 2024, VI Semester

Max marks: 20

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

1. (a) Let  $T_v = T_{a,b}$  be a translation matrix where  $a, b$  are the translation factors along the x and y directions. Prove the following equation:

$$T_{v_1} \cdot T_{v_2} = T_{v_2} \cdot T_{v_1} = T_{v_1+v_2}$$

(5)

- (b) Then experimentally write a code proving the same for the test image (test\_mid.png). Also, write the structure of the code in the answer sheet in about 100 words.

(5)

2. (a) Explain this property of projective transformation.  
“ Projective transformation preserves lines but not necessarily parallelism. ”
- (b) How can you prove this statement experimentally? Experiment and write the explanation in the answer sheet in about 100 words. You can use any image of your choice from the internet for this experiment.

(5)

**\*\*\*Best wishes\*\*\***