

BRAC UNIVERSITY

Department of Computer Science and Engineering
CSE423 : Computer Graphics

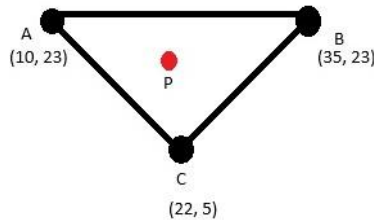
Examination: Quiz 2
Duration: 35 Minutes

Semester: Spring 2025
Full Marks: 15

Answer the following questions. You **MUST** show the steps/calculations where applicable.
Figures in the right margin indicate marks.

Name:	ID:
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1. You're designing a 3D scene for a sci-fi simulation game. A cylindrical mirror is placed in a high-tech control room. The center of curvature of the mirror is at $(-10, -20, -100)$. A light source is placed at $(5, 10, 0)$ with a high intensity of 0.85. The intensity of ambient light in the room is 0.2. A point on the mirror you're observing is located at $(-5, -18, -95)$. The mirror has: Ambient reflection coefficient (k_a) = 0.12, Specular reflection coefficient (k_s) = 0.7 and Shininess factor (n) = 80. You're standing in front of the mirror at the player position $(30, 10, 15)$. Calculate the total intensity of the light you see from that point of the mirror, ignoring attenuation. [6]



2. A. Given that $A = 20$, $B = 25$, and $C = 47$, which shading method would be suitable to use to determine the color of the pixel P? Determine the color of P and show the process using mathematical calculations. [4]

B. If there is a spotlight at P, will the shading method you chose be able to detect the spotlight? Please provide your reasoning. [3]
3. Write two differences between RGB and CMY models. [2]