

# COMP.SGN.350 Imaging Sensors and Systems

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NO literature in the examination, short and compact answers are preferred.

1. Describe the dual nature of light and explain how this dual nature is utilized in image sensors. (5pt)
2. What is the meaning of f-number in an imaging system? (3pt)
3. What is the quantum efficiency of an imaging sensor, and how does it affect the sensor's performance? (4pt)
4. What are the advantages and disadvantages of CCD sensors compared to CMOS sensors in digital imaging applications? (4pt)
5. What is the difference between temporal noise and spatial noise? (3pt)
6. What is the camera response function, and why is it important in imaging systems? (5pt)
7. What are the key stages in a camera imaging pipeline? Describe briefly each stage. (5pt)
8. Describe the fundamental methods for setting manual and auto white balance in digital imaging. (3pt)
9. What are the essential components of a hyperspectral imaging system, and what is the function of each part? (5pt)
10. What is an event camera, and how does it differ from traditional frame-based cameras? (3pt)