

Homework #7
AS101 Summer 2006
Dr. Withers

GRADE SHEET

Assigned: 2006.06.06
Due: 2006.06.07, start of class

1) Plan how you will study for the mid-term exam over the next seven days

2) Example of a multiple choice question (25 pts)

Which of these discoveries was made by Galileo?

- A) The planets orbit the Sun, not Earth
- B) Invention of the telescope
- C) The law of gravity
- D) Four moons of Jupiter

D) Four moons of Jupiter 25 pts

3) Example of question with a one or two word answer (25 pts)

Collectively, Mercury, Venus, Earth, and Mars are called _____

Terrestrial planets 25 pts

4) Example of question with an answer that is longer than a few words (25 pts)

Similarities between cameras and eyes were discussed in class. What three parts of the eye were talked about, and what did each of those parts do to light?

Pupil – Controls how much light comes into the eye

Lens – Focuses the light or bends the light

Retina – Detects the light

5 pts for each part of the eye, 5 pts for the role of each part

Maximum of 25 pts

5) Example of calculation/equation question (25 pts)

Hot objects emit thermal radiation. The intensity of the thermal radiation peaks at some wavelength. What equation relates that wavelength to the object's temperature [include units!]? What is the peak wavelength of thermal emission for a 300 K planet?

$\lambda_{\max} = 3 \text{ mm} / (T \text{ in Kelvin})$ where λ_{\max} is the wavelength of maximum intensity 10 pts

Similar equation, but with units incorrect or missing 5 pts

Wavelength = $3 \text{ mm} / 300 = 3 \times 10^{-3} \text{ m} / 3 \times 10^2 = 1 \times 10^{-5} \text{ m}$ 15 pts

$1 \times 10^{-5} \text{ m}$ without showing any work 5 pts

Attempt to use appropriate equation 5 pts