

### Grading Exam 3: Essays 3, 4, & 5

#### Essay 3:

4 pts each development–

- Agriculture
  - 5-9 independent origins (Mesoamerica, fertile crescent, Andes, etc)
  - allowed settlements, population growth
- Written language
  - 2-4 independent origins (Sumeria, Mesoamerica, China?, Egypt?)
  - allowed for extrasomatic information storage, and passing on info
- Metal use
  - Origins dependent on available resources
  - Allowed tool development, progress to technology
- Centralized states
  - Origins in Sumeria, Mesoamerica
  - Allowed for large projects, classes of scientists
- Industrial revolution
  - No independent origins, because world was interconnected by then
  - Allowed for electricity and radio communications

3 pts off if you failed to mention, in some detail, how these were connected to a civilization's *capability* for interstellar communication

#### Essay 4:

6 pts – a development that changed our worldview, not a technological advance, who it is attributed to, why it's important (something like Copernicus putting forward the heliocentric model of the 'universe')

7 pts – detailed discussion of the connection of capability vs. interest, not just that they are/aren't, but examples of how and why

7 pts – estimate  $f_c$  and explain reasoning

#### Essay 5

6 pts – human threat, the timescale associated with it, and how it destroys civilization

6 pts – natural threat, timescale, and details of how it destroys civilization

8 pts – estimate for  $L$ , your reasoning, and consistency, plus which of your examples you think is most likely