

Virology – Biology W3310/W4310 Spring 2017

Prof V. Racaniello

Study questions for lecture 4: Structure of viruses

1. What are the different functions of viral structural proteins?
2. What is meant when we say that viral capsids are metastable? Why must they be metastable? How is this property achieved?
3. Know the definitions of subunit, structural unit, capsid, nucleocapsid, envelope, and virion.
4. What are the two rules of symmetry by which virus particles are assembled? Give an example of a virus that is built with each type of symmetry.
5. Know the principles of icosahedral symmetry as they apply to viral capsids: 20 equilateral triangles, 5-, 3-, and 2-fold axes of symmetry
6. What does the T number describe?
7. How is the simplest icosahedral capsid constructed?
8. If capsid proteins are not larger than 20-60 kDa, how do you make larger capsids? How do these capsids differ from smaller capsids?
9. What is the function of viral envelope proteins?