

Biology Questions

Student's Name:

Class:

Date:

1. Describe differences in reproductive processes between viruses and bacteria

Viruses are only "interested" in host cells, The virus cannot spread outside a host cell since it requires a complicated structure. According to their RNA instructions, the host's cellular mechanisms support viruses in producing DNA RNA and building protein. bacteria are single-cell organisms that produce their power and can reproduce themselves. Bacteria that build and replicate their properties are known as cellular species.

2. Explain what factors affect the basic reproductive rate (R_0) for a disease and why a value of $R_0 > 1$ can lead to an epidemic.

A society is not entirely resistant to illness in the world today. For instance, safety or vaccine prediction may achieve some degree of tolerance. When ill, secondary infections are sometimes more significant. For any illness, the activity-reducing (R) number for a reaction group and hosts with vulnerability is the cumulative number of secondary cases. If $R > 1$ raises the number of patients at the start of an epidemic, for example. $R = 1$ is a normal state, and $R < 1$ limits the number of cases. Only the reproductive number of the asset and the host group is allowed (x).

3. What is herd immunity? Why must you vaccinate a larger proportion of the population for measles than for smallpox in order to achieve herd immunity?

Herd immunity results from many community-based vaccinations and dislike, which seldom transmit the disease amongst people. Both the embryo and immune-free and stable persons cannot then be spread. Measles conditions may also be extended to the larger community, so 90-95% can also be vaccinated to protect the populace as a whole. At the same time, The rate of spread of smallpox usually is slower than that of measles. Vaccine viruses are not approved as general protection against smallpox. In any organization that actively monitors

or promotes vaccines, there may also be serious risks or even death. Anything that becomes more susceptible or allergic to the virus will inherit the disease immediately.

4. Describe two community mitigation efforts that can help to reduce the spread of an infectious disease like influenza AND how each effort does so in particular (in other words, which part of the R_0 equation is affected).

The community has modernized vital public health services such as water and sanitary networks and increased visibility, and quickly curb pandemic gusts.

Enhanced capability – the likelihood of clinical services changes compared to prevalence, pathogen, and vulnerable population – is used in successful preparation and disaster management.

5. Explain why evolution by natural selection is expected to favor pathogens with intermediate virulence rather than high or low virulence.

Different biological thresholds influence the production trade in parasite virulence. The host society is innocent people's most giant parasite. However, still very much is linked to the parasite's capacity to monopolize the potential of susceptible hosts to survive and efficiently reproduce between hosts. The effectiveness of the host culture is often dependent on the host population's physiological performance. As well as faster, more virulent stress becomes a host automatically, superinfection is a latent paradigm of power fighting. This renders more volatile.