POSSIBLE TOPICS FOR FREE-RESPONSE QUESTIONS

At least a few of the many options for the free-response questions on the forthcoming final exam will be taken from the following list:

Explain how a nerve impulse travels along an axon.

Explain the proto-oncogene theory and how it is directing or focusing further research.

What is energy-stability-area (ESA) theory? What are some of its main findings, conclusions, and explanations?

Explain why the extinction of orangutans would threaten the diversity of many other animal and plant species.

Draw a fully labeled illustration showing a section through the human eye and the layers that surround it.

Draw a fully labeled illustration showing a section through the human ear, including both cochlear and vestibular portions.

What kind of disease is Kaposi's sarcoma? How did this disease help scientists discover the cause of AIDS? How was it determined that AIDS was transmitted by a virus?

List at least three diseases that can result from either too much or too little of a neurotransmitter; specify in each case what neurotransmitter is involved, whether the disease results from too much or too little of the neurotransmitter, and how drugs or other treatments may help modify these conditions.

What are some mechanisms by which tobacco causes harm? What are some mechanisms that drive many people to continue to use tobacco despite their understanding of the harms?

Select one infectious disease whose frequency increased in the last 50 years. Tell what you know about its causes, the factors that promote its spread, and the remedies that are being used to contain the spread.

Explain how the burning of fossil fuels contributes to ocean acidification. ALSO explain how and why this acidification affects marine biodiversity.

Explain why chemotherapy has so many side effects, and describe at least two ways in which these effects are treated.

List at least four applications for which chlorofluorocarbons have been used, then explain the resulting problems (including how they come about) and also explain what has been done or might be done to mitigate these problems.