

平成21年度 大学院理学系研究科生物科学専攻

博士前期課程

冬募集 入学試験問題

英 語

試験時間：10：30 ～ 12：00

配 点：150点

注意

- (1) 問題Ⅰから問題Ⅲに解答しなさい。問題用紙は表紙と裏表紙をあわせて6枚ある。
- (2) 解答用紙は3枚ある。問題ごとに、各々1枚の解答用紙を使用すること。
- (3) 3枚の解答用紙それぞれに、受験番号と氏名を記入すること。
- (4) 解答用紙の表面に書ききれない場合には、裏面の指定された部分を使用すること。
- (5) 配付された解答用紙は、3枚とも提出すること。

問題 I. 次の英文の下線部を和訳しなさい。

(1)

There are at least two ways of approaching the study of nature. One tactic is to investigate a habitat or any circumscribed local environment with the aim of producing an inventory of the organisms found there, preferably with some indication of their relative abundance or population densities. Such data underpin efforts directed towards the conservation of biodiversity. The second approach concentrates upon what the organisms are doing in the habitat, and might involve measuring attributes of groups of animals which have similar interactions or use the same resources – such as predators or the animals which eat algae- but which are not necessarily closely related.

(D. Dugeon 1999, Tropical Asian Streams より引用)

<参考> tactic, 戦術 ; habitat, 生息場所 ; inventory, 目録 ; underpin, 支える ; predator, 捕食者 ; algae, 藻類

(2)

Inflammation is the body's immediate response to damage to its tissues and cells by pathogens, noxious stimuli such as chemicals, or physical injury. Acute inflammation is a short-term response that usually results in healing: leukocytes infiltrate the damaged region, removing the stimulus and repairing the tissue. Chronic inflammation, by contrast, is a prolonged, dysregulated and maladaptive response that involves active inflammation, tissue destruction and attempts at tissue repair. Such persistent inflammation is associated with many chronic human conditions and diseases, including allergy, atherosclerosis, cancer, arthritis and autoimmune diseases.

(Nature 454 (2008), p427 より引用一部改変)

<参考> inflammation, 炎症 ; pathogen, 病原体 ; noxious, 有害な ; acute, 急性 ; dysregulated, 制御不能の ; maladaptive, 不適応の ; atherosclerosis, アテローム性動脈硬化症 ; arthritis, 関節炎

(3)

Kinases are important regulatory proteins, relaying signals from outside the cell to cause downstream events, such as changes in cell metabolism, migration, or proliferation. Unregulated activity of specific individual kinases is the cause for many cancers and neurological disorders. Recently, the importance of kinases in the etiology of cancer has been proven by the successful use of kinase inhibitors for the treatment of various cancers.

(Drug Discovery Today 12 (2007), p717 より引用一部改変)

<参考> etiology, 病因

問題II. 次の説明文から5つを選び、説明文が意味する用語をそれぞれ英語と日本語で答えなさい。

1. The mathematical expression for a particular sigmoid curve in which the percentage rate of increase decreases in linear fashion as population size increases.
2. Movement of individuals into a population.
3. A representation of various paths of energy and material flow through populations in a community.
4. The end point of a succession, or a community that has reached a steady state under a particular set of environmental conditions.
5. Adult-like immature stage of an insect with direct development.
6. A medical term that describes a state of having sufficient biological defenses to avoid infection, disease, or other unwanted biological invasion.
7. A protein molecule that receives and responds to a neurotransmitter, or other substance.
8. A measure of the disorder of a system. The concept of it is particularly notable as it is applied across physics, information theory and mathematics.
9. A metabolic pathway that converts carbon dioxide into organic compounds, especially sugars, using the energy from sunlight.
10. The synthesis of RNA under the direction of DNA nucleotide sequence information.
11. The process in which a eukaryotic cell separates the chromosomes in its cell nucleus, into two identical sets in two daughter nuclei.
12. A form of programmed cell death in multi-cellular organisms.

問題III. あなたの卒業研究あるいはそれに準ずる研究について，目的，方法，結果を，合計で 200語程度の英文にまとめなさい。