

平成 1 4 年度博士前期課程入学試験問題

機能機械学 専攻		受験番号	
試験科目	英語	2 枚中の 2	

II 1. 次の英文を読んで、以下の問いに答えなさい。

(a) The three most promising technologies that have emerged in the last few years are nanotechnology, biotechnology, and information technology. There are powerful overlaps among the three technologies. For example, the idea of nanotechnology resulted from applying an engineering perspective to the discoveries of molecular biology, and one path to nanotechnology lies through further advantages in biotechnology. Also, hierarchical biological systems can be thought of as composed of autonomous agents (organisms), analogous to the autonomous software agents with built-in logic used in information technology. Moreover, the study of the inherent structure within biological information and biological systems led to the emergence of the bioinformatics discipline.

(b) The synergistic coupling of biotechnology, nanotechnology, and information technology with other leading edge aerospace technologies can produce breakthroughs in vehicle concepts and exploration missions, enable new science, and reshape our frame of reference for the future. To date, these technologies remain in an exploratory phase, at a level of development similar to that of computer technology in the 1950's. Scientists and engineers have yet to understand all the issues related to characterization, control, and manipulation of materials at the nanometer scale.

1) 下線部 (a) を日本語に訳しなさい。

2) 下線部 (b) を日本語に訳しなさい。

2. 以下の専門用語を英語にしてください。

応力集中	(安全率	(
脆 (ぜい) 性	(靱 (じん) 性	(
鍛造加工	(粘弾性	(
連続の式	(等価回路	(
共振	(圧電効果	(