

平成13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1
<p>I 1. 次の英文を日本語に訳しなさい。また、記されている日本語に相当する英語を示しなさい。</p> <p>1) Worm gearing is a modification of screw gearing in which the shafts are at right angles, axes non-intersecting. The velocity ratio of screw gearing is independent of the radii of the pitch surfaces, the great advantage of screw gearing being that a high velocity ratio can be obtained with comparatively small wheels. The disadvantage is that friction and wear are greater than with spur gearing. The efficiency of a worm and worm wheel depends on the coefficient of friction between the rubbing surfaces. An efficiency of 98% has been obtained under ideal conditions, but ordinary conditions of use will reduce this from 60% to 80%.</p> <p>2) The Ministry of Posts and Telecommunications is launched a project aimed at introducing commercial wireless systems that can transmit video by 2002. The MPT intends to make the necessary spectrum allocation, install base stations nationwide, and create an environment that encourages commercial development of compatible systems. By supporting TV-like real-time transmissions from notebook PCs and videophones, the aim is to give Japan a full mobile wireless multimedia infrastructure. As a first step, the Ministry will make available the 2560-GHz band, which would enable up to 1 million persons to use the system simultaneously. The MPT foresees establishing base stations at airports, railway stations, bus stops, and other public locations.</p> <p>3) 応力-ひずみ曲線 (), 太陽電池 () 弾性限界 (), 生産工場の自動化 () ロボット工学 (), ひずみ硬化 () 熱伝達 (), 焼入れ () 微分方程式 (), 周波数変調 ()</p>		