Points were awarded for (1) simply working out what was going on from an EE point of view, i.e., the moving magnet was creating a time-varying magnetic field in the conductor – as well as in the insulator (wood) – which produced eddy currents whose magnetic fields opposed the motion creating them. Then (2) the wood produced a negligible effect because the eddy currents were inhibited by the lack of conductivity and were small/negligible, while the eddy currents could flow relatively freely in the copper.

Further points were awarded for (3) identification of Faraday's Law as the physical basis for the hypothesized link between time-varying magnetic field in the conductor and the induced eddy currents. This identification most succinctly made use of Faraday's law in the form:

$$EMF = -\partial N/\partial t$$

where *EMF* indicates the induced emf, N is the magnetic flux threading the circuit, and t is the time. In addition, since the pendulum motion of the magnet was most clearly opposed by the currents in the conducting material, it was expected that the student would mention (4) Lenz's Law (essentially the minus sign in the above equation). Finally, (5) in response to a query from the instructor about why the motion of the magnet was opposed and not assisted by the eddy currents, some mention of conservation of energy led to the final assignment of points for this part.

To end this brief exam, the instructor held the wooden stand down firmly on the table and asked the student to remove the copper block without touching or otherwise disturbing the magnet. To cut a long story short, this can only be done by slipping the copper block out from under the magnet at an extremely slow rate, i.e., so that the rate of change of magnetic field in the block is so slow that the induced currents are negligible. Slipping the block out quickly leads to a substantial disturbance of the magnet. At this stage the final points were awarded based on the student's recognition that the disturbance of the magnet was simply another aspect of the original problem. A student who laughed and said "you are having me on – there is no way I can avoid disturbing the magnet except by taking the copper away very slowly" got full marks for this part.