PHYSICS EXAMINATION PROBLEMS
SOLUTIONS AND HINTS FOR STUDENT SELF-STUDY

Module Code and Lecturer	PHY1106: PV
Name of module	Waves section
Date of examination	June 2003

3(ii) ω is the angular frequency; k the wavenumber (or wavevector); a the particle separation; T the tension; m the particle mass.
Sketch: see lecture notes.
A medium is said to be dispersive if the phase velocity of a wave in the medium varies with wavelength (frequency), or equivalently if the group velocity if the wave is not equal to the phase velocity. Normal dispersion is the case in which v_g is less than v_p.

4 0.05 m; 4.77 Hz; 1.05 m
(a) –0.0453 m; (b) 0.636 ms^{-1}; (c) 0 ms^{-1}.
Phase velocity is the velocity of a point of constant phase on a wave.
5 ms^{-1}
0.125 N

5 v is the phase velocity
Proof, see lecture notes; wave is propagating in the negative x direction.
Remainder of question: see lecture notes.