

- 5 (a) Describe the Doppler effect.

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.....
.....[1]

- (b) A car travels with a constant velocity along a straight road. The car horn with a frequency of 400 Hz is sounded continuously. A stationary observer on the roadside hears the sound from the horn at a frequency of 360 Hz.
The speed of sound is 340 m s^{-1} .

Determine the magnitude v , and the direction, of the velocity of the car relative to the observer.

$v = \dots\dots\dots \text{m s}^{-1}$

direction
[3]

[Total: 4]