Both source and observer are moving with speed v.
Wave is emitted with frequency f, observer detects it with frequency f'

(a) If wave=sound, f=f'
(b) If wave=light, f≠f'
(c) (b) is wrong and (a) is right
(d) (a) is wrong and (b) is right
(e) None of the above

Correct answers are (a) and (c). For light, clearly f=f'.

For sound:

source approaching observer: $f' = \frac{1}{1 - v/c} f$

observer approaching source: $f' = (1 + v/c) f$

observer moving away from source: $f' = (1 - v/c) f$

source approaching observer and observer moving away from source: $f' = \frac{1}{1 - v/c}(1 - v/c) f = f$