

26 The diagram shows apparatus for the measurement of the frequency of a sound wave.



Sound of the unknown frequency is reflected back from a metal plate. A microphone placed at a distance  $D$  from the metal plate detects the sound intensity. A minimum intensity is detected with  $D = 12.0\text{ cm}$ . The plate is moved further away from the microphone until the next minimum is detected with  $D = 15.0\text{ cm}$ .

The speed of sound in air is  $336\text{ ms}^{-1}$ .

What is the frequency of the sound?

A 56 Hz

B 112 Hz

C 5600 Hz

D 11200 Hz

27 An astronomer observes the light from a star that is moving away from the Earth.