- (b) (i) State the universal law of gravitation.
 - (iii) Express it in a mathematical form. (Explain the symbols used.)
 - (iii) State the value of universal gravitation constant in S.I. unit.
- (c) Using the following velocity time graph of a body answer the following [4] questions.



- (i) During which time intervals is the body moving with variable velocity?
- (iii) What is the acceleration of the body during the interval 3 s to 5 s?
- (iii) What is the displacement of the body in the last four seconds of its motion?

Question 6

- (a) (i) Differentiate between the terms supersonic and ultrasonic.
 - (ii) State two uses of ultrasound.
- (b) State three factors on which the speed of sound depends. [3]
- (c) The speed of sound in air is 320 ms⁻¹ and in water it is 1600ms⁻¹. It takes 2.5 s [4] for sound to reach a certain distance from the source placed in air.
 - (i) Find this distance.
 - (ii) How much time will it take for sound to travel the same distance when the source is in water?

[3]

[3]

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