

Date: 21-01-2021

Class: 9th Genesis

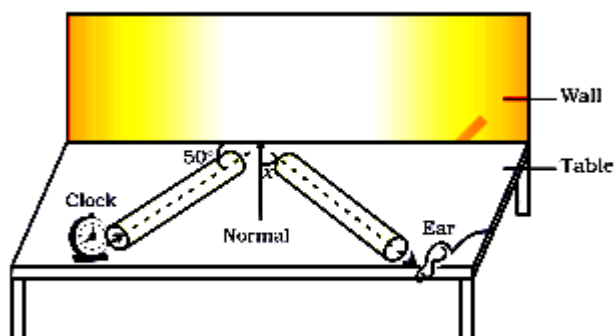
Subject: Science

Test code: SEP16(21021319)

Physics

M. Marks: 20

1. Why are sound waves called mechanical waves? (1 marks)
2. Suppose you and your friend are on the moon. Will you be able to hear any sound produced by your friend? (1 marks)
3. Which wave property determines (a) Loudness, (b) pitch? (1 marks)
4. Guess which sound has a higher pitch; guitar or car horn? (1 marks)
5. How are the wavelength and frequency of a sound wave related to its speed? (1 marks)
6. Explain how sound is produced by your school bell. (1 marks)
7. What are wavelength, frequency, time period and amplitude of a sound wave? (2 marks)
8. Sound produced by a thunderstorm is heard 10 s after the lightning is seen. Calculate the approximate distance of the thunder cloud. (Given speed of sound = 340 m s^{-1}). (2 marks)
9. For hearing the loudest ticking sound heard by the ear, find the angle x in the fig. (2 marks)



10. Why is the ceiling and wall behind the stage of good conference halls or concert halls made curved? (2 marks)
11. Establish the relationship between speed of sound, its wavelength and frequency. If velocity of sound in air is 340 m s^{-1} , calculate (3 marks)
 - (i) Wavelength when frequency is 256 Hz.
 - (ii) Frequency when wavelength is 0.85 m.
12. Draw a curve showing density or pressure variations with respect to distance for a disturbance produced by sound. Mark the position of compression and rarefaction on this curve. Also define wavelengths and time period using this curve. (3 marks)

1. (a) State law of conservation of mass? (2)
(b) What mass of silver nitrate will react with 5.85 g of sodium chloride to produce 14.35 g of silver chloride and 8.5 g of sodium nitrate if the law of conservation of mass is true?
2. Calculate the molecular masses of the following: (2)
(i) $C_{12}H_{22}O_{11}$ (ii) $Al_2(SO_4)_3$
3. (a) Which postulate of Dalton's atomic theory is the result of the law of conservation of mass? (2)
(b) Which postulate of Dalton's atomic theory can explain the law of definite proportion?
4. Write the limitations of Dalton's atomic theory? (3)
5. Calcium carbonate ($CaCO_3$) contains 40% calcium, 12% carbon and 48% oxygen by mass. Knowing that the law of constant composition holds good, calculate the mass of the constituent elements present in 2 g of calcium carbonate. (3)
6. (a) What are molecules? (3)
(b) State the difference between homoatomic & heteroatomic molecules and give examples.
7. (a) What is meant by atomicity of a molecules? Give examples of monoatomic, diatomic & tetra atomic molecules (5)
(b) What do you mean by atomic mass unit ?
(c) Why is copper represented by the symbol 'Cu' while there is no letter 'u' in the name?
(d) State law of constant proportions

Biology

M. Marks: 20

1. Why is (i) water (ii) atmosphere essential for life (2)
2. What are lichens? How are they indicators of air pollution? (2)
3. How is acid rain formed? (2)
4. List any three human activities which would lead to an increase in the CO_2 content of air (3)
5. Define:- (3)
 - (a) Greenhouse effect
 - (b) Humus
 - (c) Ozone depletion
6. How are clouds formed? How do they bring us rain? (3)
7. Draw and explain the carbon cycle in detail? (5)

