

KLINE MEMORIAL SCHOOL OF UBS, PUNE

WORKSHEET 9 – 2020 – 2021

SUBJECT: PHYSICS

Cass : X

Topic : Sound – Part B

Date : 09-05-2020

Instructions:

*Answers to all worksheets must be written in **Physics notebook** along with the questions.*

11. (i) Draw a graph between displacement and the time for a body executing free vibrations.
(ii) When can a body execute free vibrations? [Year 2015]
12. A bucket kept under a running tap is getting filled with water. A person sitting at a distance is able to get an idea when the bucket is about to be filled.
(i) What change takes place in the sound to give this idea?
(ii) What causes the change in the sound? [Year 2013]
13. (i) What are damped vibrations?
(ii) Give one example of damped vibrations.
(iii) Name the phenomenon that cause a loud sound when the stem of a vibration tuning fork is kept pressed on the surface of a table. [Year 2017]
14. A vibrating tuning fork is placed over the mouth of a burette filled with water. The tap of the burette is opened and the water level gradually starts falling. It is found that the sound from the tuning fork becomes very loud for a particular length of the water column.
(i) Name the phenomenon taking place when this happens.
(ii) Why does the sound become very loud for this length of the water column? [Year 2013]
15. (i) What is meant by resonance?
(ii) State two ways in which resonance differs from forced vibrations. [Year 2012]
16. (i) A wire of length 80 cm has a frequency of 256 Hz. Calculate the length of a similar wire under similar tension which will have frequency 1024 Hz. [Year 2017]
(ii) A certain sound has a frequency of 256 Hz and a wave length of 1.3 m.
(i) Calculate the speed with which this sound travels.
(ii) What difference would be felt by a listener between the above sound and another sound travelling at the same speed, but of wavelength 2.6 m? [Year 2017]
17. Explain, why stringed musical instruments, like the guitar, are provided with a hollow box.
18. The following diagram shows the displacement time graph for a vibrating body.
(i) Name the type of vibration produced by the vibrating body.
(ii) Give one example of a body producing such vibrations. [Year 2012]
- Diagram ----- Refer Textbook Page No. 164 Question 15.
19. (i) A person is tuning his radio set to a particular station. What is the person trying to do tune it?
(ii) Name the phenomenon involved, in tuning the radio set.
(iii) Define the phenomenon named by you in part (ii). [Year 2009]

- 20. (i) Sometimes when a vehicle is driven at a particular speed, a rattling sound is heard.
Explain briefly, why this happens and give the name of the phenomenon taking place?
(ii) Suggest one way by which the rattling sound could be stopped. [Year 2008]**
- 21. Refer textbook Page No. 165. Question No. 27. Write the answer for it.**
- 22. (i) What do you understand by free vibration of a body?
(ii) Why does the amplitude of a vibrating body continuously decrease during damped vibrations? [Year 2018]**
- 23. Define resonant vibrations.**