WORKSHEET 2

CHAPTER 7 – SOUND

A. Tick (✓) the correct option.

1. The amplitude of body under forced vibrations is :
   a. small. b. large. c. very large. d. zero.
2. The process of detecting obstacles by emitting ultrasound is called
   a. RADAR. b. ultrasonography. c. X-ray. d. sound ranging.
3. After the original sound dies off, sensation of sound persists in our ear for
   a. 1/10 s. b. 1/100 s. c. 1 s. d. 100 s.
4. Trawlers used buy fishermen is based on the principle of
   a. reverberations. b. echo. c. damping. d. none of these.
5. The natural frequency of the vibrations is given by
   a. $\frac{1}{2l}\sqrt{Tm}$. b. $\frac{1}{2l}\sqrt{\frac{m}{T}}$. c. $\frac{1}{2l}\sqrt{\frac{T}{m}}$. d. none of these.

B. Fill in the blanks.

1. _____ is a form of energy.
2. SONAR is used to find the depth of sea using _____
3. _____ are also used by geologists to detect underground ores or oil deposits.
4. The body set into _____ is in phase with respect to the natural vibrating body.
5. During an earthquake, _____ can cause disaster.

C. State whether the following statements are true or false.

1. Every time another 10 dB is added to the sound level, the loudness is multiplied by 10.
2. The unit of intensity is watt/metre^2.
3. The loudness of sound is decreased due to the presence of resonant bodies.
4. If wind is blowing in the direction of propagation of sound, loudness is increased.
5. A musical sound produces an irregular waveform.

D. Match the following.

1. Whisper	0 dB
2. Threshold of hearing	130 dB
3. Loud music in disco	140 dB
4. Factory noise	20 dB
5. Jet aircraft 30 m away	80–90 dB

Name: ..... Teacher's signature: .....

Class: ..... X ..... Date: .....

E. Answer the following questions.

Very short answer questions

1. Name three fundamental characteristics of a sound.
2. What is noise?

Short answer questions

1. What are the harmful effects of noise pollutions?
2. Define intensity of a sound.

Long answer questions

1. What is the relationship between intensity and loudness?
2. Differentiate between musical sound and noise.

ANSWERS

WORKSHEET 2

A. Tick (✓) the correct option.

1. a
2. d
3. a
4. b
5. c

B. Fill in the blanks.

1. Sound
2. echo depth sounding
3. Echoes
4. resonance
5. resonance

C. State whether the following statements are true or false.

1. T
2. T
3. F
4. T
5. F

D. Match the following.

1. Whisper	20 dB
2. Threshold of hearing	0 dB
3. Loud music in disco	130 dB
4. Factory noise	80–90 dB
5. Jet aircraft 30 m away	140 dB

E. Answer the following questions.

Very short answer questions

1. The three fundamental characteristics of sound are
   i. loudness
   ii. pitch
   iii. quality.
2. A discontinuous and non-uniform sound produced by irregular and non-periodic disturbances producing unpleasant effect to our ears is called noise.

Short answer questions

1. Harmful effects of noise pollution are
   i. It may result in the loss of hearing to deafness.
   ii. It reduces concentration, increases stress, causes headache and nervous tension resulting in the loss of work efficiency.
2. The intensity of a sound wave at any point in space is defined as the amount of energy passing per unit time per unit area in a direction perpendicular to the area.

Long answer questions

1. Weber and Fechner established the relationship between loudness and intensity of a sound. The loudness of a sound L is directly proportional to the logarithm of the intensity I of the sound.

$$L \propto \log I$$

or,

$$L = K \log I$$

where K is a constant.

2. Refer Table 7.4, Page 148 of the textbook.