

**OBJECTIVE TYPE QUESTIONS & ANSWERS**

**Q1. Each question is followed by four options encircle the correct option.**

**1) Sound waves cannot pass through:**

- a. metals
- b. air
- c. vacuum
- d. water

**2) Sound waves travel faster in:**

- a. wood
- b. air
- c. water
- d. copper

**3) Ultrasonic waves have frequency greater than:**

- a. 20 kHz
- b. 0.2 kHz
- c. 10 kHz
- d. 5 kHz

**4) Sound is a form of energy and it is produced by:**

- a. air
- b. vibrating body
- c. heating
- d. water

**5) Loudness of sound decreases by increasing:**

- a. no. of vibrations
- b. amplitude
- c. distance from sounding object
- d. none of these

**6) By increasing temperature, the speed of sound:**

- a. increases
- b. decreases
- c. remains constant
- d. becomes double

**7) The speed of sound at 0°C in air is:**

- a.  $3 \times 10^8$  m/s
- b. 1000 m/s
- c. -500 m/s
- d. 332 m/s

**8) Sound energy per unit area per second is called:**

- a. loudness
- b. intensity
- c. pitch
- d. frequency

**9) The magnitude of the sensation produced on the ear by a sound is known as:**

- a. intensity
- b. pitch
- c. loudness
- d. quality

10) Weber Fechner Law is:

- a.  $I \propto \log L$       b.  $L \propto \log I$       c.  $L \propto I$       d.  $L \propto \frac{1}{\log I}$

11) The unit of intensity level is:

- a. watts      b. watt  $m^{-2}$   
c. Joule      d. bel

12) Intensity 1 bel is given by:

- a.  $K \log \frac{I}{I_0}$       b.  $10 \log \frac{I}{I_0} \text{ db}$       c.  $K \log \frac{1}{I_0}$       d.  $K \log \frac{I^2}{I_0}$

13) Decibel is the smaller unit intensity level. 1db is equal to:

- a. 0.1 bel      b. 10 bel  
c. 100 bel      d. 0.01 bel

14) The characteristic of sound which depends upon frequency is called:

- a. loudness      b. pitch  
c. quality      d. intensity

15) The pitch of women voice as compared with men voice is:

- a. equal      b. low  
c. high      d. double

16) Human ear can hear the sound of maximum frequency:

- a. 200 Hz      b. 2000  
c. 20,000 Hz      d. 20 Hz

17) Sound level for whisper is equal to:

- a. 30 dB      b. 20 dB  
c. 10 dB      d. 0 dB

18) Product of frequency and time period is:

- a. 1      b. 0  
c. A      d. v

19) Frequency of waves having length 2m and velocity 340 m/s is:

- a. 1020 Hz      b. 680 Hz  
c. 340 Hz      d. 170 Hz

20) Speed of sound in air at normal temperature and pressure (NTP) is:

- a.  $330 \text{ ms}^{-1}$
- b.  $672 \text{ ms}^{-1}$
- c.  $712 \text{ ms}^{-1}$
- d.  $785 \text{ ms}^{-1}$

21) Sound level for ordinary conversation is:

- a. 120 dB
- b. 60 dB
- c. 20 dB
- d. 10 dB

22) The faintest audible sound of intensity is  $I_0$  and its value is:

- a.  $10^{-2} \text{ Wm}^{-2}$
- b.  $10^{-10} \text{ Wm}^{-2}$
- c.  $10^{-12} \text{ Wm}^{-2}$
- d.  $1 \text{ Wm}^{-2}$

23) The unit of relative intensity of sound is:

- a.  $\text{Wm}^{-2}$
- b. decibel
- c.  $\text{Joule s}^{-1}$
- d. no unit

24) The characteristic of sound by which two sounds of same loudness and pitch are distinguished from each other is called:

- a. pitch
- b. quality
- c. loudness
- d. frequency

25) The sound which has a jarring effect on ear is called:

- a. pitch
- b. quality
- c. noise
- d. loudness

26) If the frequency and amplitude of the sound changes in regular manner, the sound will be:

- a. noise
- b. musical
- c. loudness
- d. pitch

27) Which of the following waves are produced in resonance tube?

- a. transverse waves
- b. progressive waves
- c. stationary waves
- d. none of these

28) The distance between a node and antinode is:

- a.  $\lambda$
- b.  $\lambda/2$
- c.  $\lambda/4$
- d.  $3/4 \lambda$

29) Which of the following relation is true between wavelengths of stationary wave and the length of air column in first resonance position?

c.  $\lambda = \xi$

d.  $\lambda = 1/2\xi$

30) Headache and hearing loss is caused by sounds having sound level more than:

a. 60 dB

b. 120 dB

c. 10 dB

d. 80 dB

31) Audible frequency range is:

a. 10 to 1500 Hz.

b. 20 to 20,000 Hz

c. above 20 kHz

d. below 20 kHz

32) The depth of an ocean is measured by using:

a. stationary waves

b. light waves

c. ultrasonic

d. lasers

33) What will be the wavelength of sound of frequency 512 Hz, if speed of sound is  $340\text{ms}^{-1}$ .

a. 66 cm

b. 1.5 m

c.  $174080\text{ m}^{-1}$ 

d. none of these

34) Kidney stones can be crushed and removed out through urine without any surgery by using waves which are called:

a. electromagnetic

b. transverse

c. magnetic

d. ultrasonic

35) The instrument used for producing sound of particular frequency is:

a. tuning fork A

b. fork

c. hammer

d. drum

36) Sound waves are \_\_\_\_\_ in nature.

a. functional

b. compression

c. dangerous

d. always ultrasonic

37) Which is not a part of ear?

a. outer ear

b. inner ear

c. middle ear

d. optic nerve

38) Cochlea is present in:

a. outer ear

b. inner ear

c. middle ear

d. ear drum

39) Loudness of sound depends on:

a. amplitude of vibrating body

b. area of vibrating body

c. distance from vibrating body

d. all of above

40) Sound energy flowing per second through a unit area held perpendicular to the direction of sound waves is called:

- a. intensity  
b. loudness  
c. frequency  
d. pitch

41) The intensity of sound of train is:

- a.  $1 \text{ Wm}^{-2}$   
b.  $10^{-2} \text{ Wm}^{-2}$   
c.  $3 \text{ Wm}^{-2}$   
d.  $10^{-6} \text{ Wm}^{-2}$

42) If the intensity of a sound is  $10^{-4} \text{ Wm}^{-2}$ , then equivalent sound level will be:

- a. 70 dB  
b. 80 dB  
c. 90 dB  
d. 100 dB

43) The characteristic of sound by which a shrill sound can be distinguished from a grave one is called:

- a. pitch  
b. frequency  
c. note  
d. node

44) Select the false statement:

- a. flute and pianos are musical instruments  
b. a pleasant sound is called noise  
c. the change in frequency and amplitude of noise is sudden & irregular  
d. sound produced by hammering is noisy

45) Which statement is not true?

- a. Dogs can hear between 20,000 hertz to 25,000 hertz  
b. young children can hear sounds of 20,000 hertz  
c. old people cannot hear sound above 15,000 hertz  
d. human ear can hear less than 20 hertz

46) Which is not the use of ultrasonic?

- a. in finding sex of the body  
b. in removing blood clot from arteries  
c. in crushing stones in kidney  
d. in chromatography

47) When the sound waves reach near the ear drum it starts:

- a. vibrating  
b. losing  
c. sounding  
d. resonating

48) If  $I = 1 \text{ Wm}^{-2}$ , then its corresponding intensity level is:

- a. 1 dB  
b. 0 dB  
c. 120 dB  
d. 40 dB

**49) Ultrasounds are used for:**

- a. scaling of teeth  
 b. crushing kidney stones  
 c. measuring depth of oceans  
 d. all are true

**50) Loudness of sound depends upon:**

- a. amplitude  
 b. area of vibrating surface  
 c. direction of wind  
 d. all are true

**ANSWERS**

No.	Ans.	No.	Ans.	No.	Ans.	No.	Ans.
1	c	2	d	3	a	4	b
5	c	6	a	7	d	8	b
9	c	10	b	11	d	12	c
13	a	14	b	15	c	16	c
17	b	18	a	19	d	20	a
21	b	22	c	23	d	24	b
25	c	26	b	27	d	28	c
29	a	30	b	31	b	32	c
33	a	34	d	35	a	36	b
37	d	38	b	39	d	40	a
41	b	42	b	43	a	44	b
45	d	46	d	47	a	48	c
49	d	50	d				

