OBJECTIVE TYPE QUESTIONS & ANSWERS

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

1) The maximum potential energy of a vibrating mass attached to a spring is at:

a. Equilibrium position
b. Extreme position
c. Between equilibrium and extreme position
d. All of them

2) The product of frequency 'and time period is equal to:

a. 1/∞
b. b. I
c. 0
d. 1/0

3) If the mass of bob of a simple pendulum is doubled, its period:

a. is doubled
b. becomes four times
c. remains the same
d. none of the above

4) If the length of a simple pendulum is halved its time period T will become:

a) T/2
b) T/√2
c) √2T
d) 2T

5) In terms of wave length (λ), the distance between two neighboring nodes or antinodes Is:

a) λ
b) λ /2
c) λ/4
d) 2 λ

6) Which of the following waves is not electromagnetic?

a. X-rays
b. radio waves
c. light waves
d. water waves

7) Which is the correct formula to find the frequency?

a. f=T
b. f=1/t
c. T=2π $\sqrt{L}/f$
d. T=2π $\sqrt{M}/f$

8) Hertz is the unit of:

a. frequency
b. wavelength
c. mass
d. acceleration

9) Which Is not the characteristic of simple harmonic motion of a body?

a. It always vibrates about its position of equilibrium
b. Its acceleration Is always directed towards its mean position
c. its velocity is minimum at mean position

10) The Waves in which the particles of the medium vibrate perpendicular to the direction of motion of waves are called:

a. electromagnetic waves
b. transverse waves
c. compressional waves
d. longitudinal waves

11) Energy can be transferred from one place to another:

a. through matter
b. through waves
c. both of them
d. none of these

12) The apparatus used to study the properties of waves is:

a. ripple tank '
b. water tank
c. electric bulb
d. galvanometer

13) Which is concerned with bending of waves around corners?

a. reflection
b. refraction
c. diffraction
d. none of above

14) The up and down motion of hand produces waves in string known as:

a. Longitudinal waves
b. compressional waves
c. transverse waves
d. stationary waves

15) Which is not correct?

a. the number of loops on string depends upon the frequency of up and down motion of hand.
b. string makes single loop at the lowest frequency
c. the fundamental frequency is called second harmonics
d. the fundamental frequency is called first harmonics

16) Which is not the true statement?

a. water waves exhibit phenomenon of refraction
b. speed of water waves depends on the depth of water
c. speed of light is more in air than in glass
d. bending of waves from their incident path is called amplitude

17) Which is not a correct equation

a. $\lambda = VT$
b. $V = \lambda / T$
c. $T = \lambda / V$
d. $V = \lambda T$

18) Find the equation in which spr...g constant has been used:

a. $k = f_e / x$
b. $a = f / m$

19) When where will the bob have maximum kinetic energy?

a. at its mean position
b. at its extreme position
c. when the bob is stationary
d. none of the above

20) .The sound waves in air are:

a. longitudinal
b. radio
c. stationary
d. none of the above

21) The 8.1. unit of spring constants K is:

a. Nm^2
b. Nm^{-2}
c. Nm^{-1}
d.Nm

22) In S.E.M. the acceleration of the vibrating body is directly proportional to the:

a. distance
b. displacement
c. amplitude
d. velocity

23) The motion which repeats itself in equal intervals of time is called:

a. rotatory motion
b. circular motion
c. angular motion
d. vibratory motion

24) A force of 20N, produces an extension of 10 cm in an elastic spring. Then the value of spring constant is:

a. 200 Nm^{-1}
b. $2Nm^{-1}$
c. 20 Nm^{-1}
d. none of these

25) The number of vibrations completed in one second is called:

a. time period
b. frequency
c. amplitude
d. wavelength

26) One complete round trip of an object about mean position is called:

a. amplitude
b. frequency
c. Vibration
d. time period

27) In an elastic spring, SHM is produced due to:

a. K.E of spring
b. weight of spring
c. mass of spring
d. restoring force

28) The time period of the simple pendulum does not depend upon:

a. mass of object
b. length of string
c. value of g
d. tension in string

29) The time period of the spring depends upon:

a. length of spring b. mass of object
c. value of g d. none of these

30). At which place, the motion of simple pendulum becomes faster?

a. Lahore b. Quetta
c. Murree d. Karachi

31) How many times the' value of "g" on 'moon surface is less than the value of g on earth's surface?

a. 1/6 b. 2
c.4 d. 6

32) The waves which do not require a medium for their propagation are known as:

a. mechanical waves b. electromagnetic waves
c. matter waves d. transverse, waves

33) Which of the following is not electromagnetic wave?

a. ultraviolet b. Microwave
c. water wave d. radio wave

34) The speed of electromagnetic wave is:

a. $3.0 \times 10^8\ ms^{-1}$ b. $332\ ms^{-1}$
c. 600 m/s d. zero

35) The acceleration of a vibrating body is maximum at:

a. when v is maximum b. mean position
c. extreme position d. both a and b

36) At mean position, a vibrating object has maximum:

a. acceleration b. velocity
c. time period d. displacement

37) The time period of a spring executing S.H.M. is equal '0:

a. $\frac{1}{2\pi}\sqrt{\frac{m}{k}}$ b. $2\pi\sqrt{\frac{k}{m}}$ c. $\frac{1}{2\pi}\sqrt{\frac{k}{m}}$ d. $2\pi\sqrt{\frac{m}{k}}$

38) By increasing the load in the spring, the time period of spring:

a. Increases b. decreases
c. remains unchanged d. becomes zero

39) The time period of a simple pendulum is equal to:

a. $2\pi\sqrt{\frac{g}{\ell}}$ b. $\frac{1}{2\pi}\sqrt{\frac{g}{\ell}}$ c. $2\pi\sqrt{\frac{\ell}{g}}$ d. $\frac{1}{2\pi}\sqrt{\frac{\ell}{g}}$

40) The time period of simple pendulum is independent of:

a. length b. mass
c. value of g d. acceleration

41) Which of the following have maximum wavelength?

a. gamma rays b. visible light
c. microwaves d. radio waves

42) Which of the following have maximum frequency?

a. gamma rays b. radio waves
c. x-rays d. microwaves

43) Ripple tank is used to:

a. firing bomb b. to study waves
c. swimming d. none of these '

44) Bending of waves from their incident path is called:

a. reflection b. diffraction
c. refraction d. interference

45) According to the law of reflection:

a. sin i=sin y b. <i=<y
c. n=1/sinc d. <y≠<i

46) The radio transmission can be heard in such areas where the waves cannot reach directly due to:

a. reflection b. refraction
c. interference d. diffraction

47) When two identical waves travelling in opposite direction along the same line combine to form:

a. interference b. diffraction
c. stationary waved d. none of these '

48) Bending of waves around obstacles is called:

a. diffraction b. interference;
c. reflection d. refraction

49) The equation of wave speed is:

a. $f= c\lambda$ b. $\lambda=fv$

c. $v=f\lambda$ d. $v=f/\lambda$

50) The units of frequency are:

a. Hertz b. S^{-1}

c. cycles per second d. all of them

ANSWERS

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