



# Padalsalai's Telegram Groups!

( தலைப்பிற்கு கீழே உள்ள லிங்கை கிளிக் செய்து குழுவில் இணையவும்! )

- **Padalsalai's NEWS - Group**  
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- **Padalsalai's Channel - Group**  
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- **Lesson Plan - Group**  
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- **12th Standard - Group**  
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- **11th Standard - Group**  
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- **6th to 8th Standard - Group**  
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- **1st to 5th Standard - Group**  
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- **TNPSC - Group**  
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**XI Std**

**REVISION TEST [ Volume – 2 ]**

**Time:2:30 Hrs**

**PHYSICS**

**[Max. Marks - 70]**

**I. Choose and write correct answer :-**

**15 x 1 = 15**

1. If a person moves from Chennai to Trichy ,his weight.....  
a) Increases                      b) decreases                      c) remains same                      d) increases and decreases
2. When a cycle tyre suddenly bursts , the air inside the tyre expands. This process.....  
a) Isothermal                      b) adiabatic                      c) isobaric                      d) isochoric
3. In a simple harmonic oscillation the acceleration against displacement for one complete oscillation will be...a) an ellipse    b) a circle    c) a parabola    d) a straight line

**Fill in the blanks:**

4. Mercury has boiling point of.....( 357<sup>0</sup>C / 457<sup>0</sup>C )
5. The average distance a molecule can travel without colliding is called.....  
(mean free path / mean free length)

**Which one of the following statement is true?**

6. a) Critical velocity of liquid decreases when radius decreases  
b) Critical velocity of liquid decreases when density increases  
c) Critical velocity of liquid increases when radius increases  
d) Critical velocity of liquid increases when density increases

**Which one of the following statement is false?**

7. a) ideal fluid which has no viscosity  
b) ideal fluid which has no surface tension  
c) ideal fluid which has incompressible  
d) ideal fluid which has buoyancy

**Short answer question:**

8. Write the equation of Root mean square speed (  $v_{rms}$  )?
9. Write the equation of fundamental node of closed organ pipe?

**Write the correct and incorrect statement?**

10. Loudness depends on intensity of sound wave only.
11. The efficiency is always greater than the Carnot efficiency.

**Which correct and incorrect pair:**

12. a)  $v = \sqrt{A^2 - y^2}$                       b)  $T = 2\pi \sqrt{\frac{l}{g}}$                       c)  $\lambda = 1 / n\lambda_d$                       d) most probable speed =  $\sqrt{\frac{KT}{m}}$

**Which one is odd man out.**

13. Effect of pressure , Effect of Temperature , Effect of density , Effect of velocity
14.  $g' = g (1 - 2 \frac{h}{R_e})$  ,  $g' = g (1 - \frac{d}{R_e})$  ,  $g' = g (1 - \frac{h^2}{R_e})$  ,  $g' = g - \omega^2 R \cos^2 \lambda$
15. **A :** As root mean square speed of hydrogen is much lesser than that of nitrogen.

- R :** it easily escapes from the earth's atmosphere                      a) (A)True and (R)False  
b) A & R wrong                      c) (A) False and (R)True                      d) (A) is True and R supports A

**II. Answer the following questions:- [ Compulsory – 24 ]****6 x 2 = 12**

- 16.State Newton's universal law of gravitation.
- 17.Why is no lunar eclipse and solar eclipse every month.
- 18.What is Reynold's number?
19. State Stefan – Boltzmann law
- 20.State Kelvin – Planck statement of second law of thermodynamics.
- 21.Why moon has no atmosphere?
- 22.Define time period of simple harmonic motion.
- 23.What is meant by end correction in resonance air column apparatus?
- 24.The wavelength of two sine waves are  $\lambda_1 = 1\text{m}$  and  $\lambda_2 = 6\text{m}$ . calculate the corresponding wave numbers.

**III. Answer the following questions:- [ Compulsory – 33 ]****6 x 3 = 18**

- 25.Derive an expression for energy of satellite.
- 26.Write the practical applications of capillarity.
- 27.Express the change in internal energy in terms of molar specific heat capacity.
- 28.Derive the expression for Carnot engine efficiency.
- 29.What is the relation between the average kinetic energy and pressure.
- 30.State the laws of simple pendulum.
- 31.Calculate the amplitude , angular frequency , frequency , time period and initial phase for the simple harmonic oscillation given below. i)  $y = 0.3 \sin ( 40\pi t + 1.1 )$  ii)  $y = 2 \cos ( \pi t )$
- 32.Difference between transverse and longitudinal waves
- 33.Let  $f$  be the fundamental frequency of the string is divided into three segments  $l_1$  ,  $l_2$  and  $l_3$  such that the fundamental frequencies of each segments be  $f_1, f_2$  and  $f_3$  respectively.  
Show that  $\frac{1}{f} = \frac{1}{f_1} + \frac{1}{f_2} + \frac{1}{f_3}$

**IV. Answer the following questions:-****5 x 5 = 25**

- 34.Explain the variation of  $g$  with i) altitude and ii) depth **[Or]**  
Explain how overtone are produced in a open organ pipe.
- 35.State and explain Bernoulli's theorem. **[Or]**  
Describe the vertical oscillation of a spring.
- 36.Derive Mayer's relation for an ideal gas. **[Or]**  
Write the postulates of kinetic theory of gas.
- 37.Discuss the law of transverse vibration in stretched strings. **[Or]**  
Discuss in detail the energy in simple harmonic motion.
- 38.a) State Kepler's three laws. b) define gravitational potential **[Or]**  
Explain in detail Newton's law of cooling.

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