

Class: 11<sup>th</sup>

Physics

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All Punjab Boards

## Most Important Guess Paper



"یہ گیس پیپر اتنا اہم ہے کہ آپ کی محنت اور یہ سوالات آپ کو کامیابی کی بلندیوں تک پہنچائیں گے، انشاء اللہ! ان کو اچھی طرح تیار کر لیں۔"

## Most Important Exercise Short Questions

Ch. No	Question No	Ch. No	Question No
1	1 – 3, 6 – 8	7	1 – 3, 6, 7, 8, 9, 12, 13
2	1, 2, 5 – 7, 8 – 10, 11, 12, 15, 17, 18, 21	8	1, 3, 5 – 7, 10
3	2, 3, 6, 7, 9, 11, 12, 13	9	1, 3, 6, 7, 9, 10, 11
4	2, 5, 7, 8, 9, 10	10	1, 3, 4, 10, 11
5	1, 3, 4, 5, 6, 9, 11, 13	11	1, 2, 5, 6, 7, 8, 9, 11, 12
6	1 – 6, 8 – 10		

## Additional Most Important Short Questions

Define Light year? Supplementary units, How we reduce error? Principle of Homogeneity, How many seconds and nanoseconds in one year? Frontiers of fundamental sciences, Base and derived quantities, table for base units, how we determine uncertainty? Is zero significant or not? dimension of force acceleration and velocity, use of dimension analysis, Base, derived and Supplementary units, scientific notation, Radian/Ste-radian, Random/Systematic error, Significant figures, Precision and Accuracy, Uncertainty in timing experiment (How to Reduce). **NUMERICAL 2.3 (S.Q+L.Q)**, Subtraction of vector, torque its dimension and unit, conditions of equilibrium, Resultant and Null Vector, Unit and Equal vectors, Position vector, Equilibrium, distance and Displacement. Average, instantons, uniform and variable velocity, inertial and non-inertial frame of reference, how distance calculate from velocity time graph? Law of conservation of linear momentum, does a moving body have impulse? Why safety hamlet of motor cycle is padded? Principle of rocket propulsion, Plastic missile and trajectory, Inertia/ Law of inertia, Laws of motion, Relation b/w momentum and force, Isolated system, Momentum, Projectile motion, height of a projectile, How we gain energy from tides and waves? Salter's duck, Conservative and non-conservative field and force, Power,  $P=F.V$ , Work-energy Principle, Negative sign in A.P.E, law of conservation of energy, state the direction of angular momentum and angular velocity, real and apparent weight, how artificial gravity created? Why microwaves are used in satellite communication? Angular





displacement, Relation b/w linear and angular velocity/ Acceleration, Centripetal force/ Acceleration, Angular momentum, moment of Inertia, Artificial satellites, orbital velocity, **Example 5.1 (S.Q+L.Q)** Viscosity, Stokes law, Drag force, Terminal Velocity, Equation of continuity, Bernoulli's Theorem, Torricelli's theorem / Venturi relation, S.H.M with its characteristics, Hooks law, what is phase? Does frequency depend on amplitude? Free and forced oscillations, driven harmonic oscillator, resonance with example, how cooking of food is possible in oven? Damped oscillations, Angular frequency, Simple Pendulum, Resonance/ Applications, mechanical and electromagnetic waves, crest trough node and antinode, speed of sound depends on? Effect of density, pressure and temperature on the speed of sound, principle of super positions, types of interference, red and blue shift, Transverse and longitudinal waves, progressive waves, beats, node, antinode, wavefront, Ray of light/Nature, Huygen's Principle, Conditions for interference, centre of newton ring dark why and define it, unpolarized and plane polarized light, why Polaroid sunglasses are important than ordinary glasses? Diffraction, Interference of light, how convex lens act as magnifying glass? Spectrometer and its functions and uses specially collimator, critical angle and total internal reflection ad its conditions, how signal transmitted though optical fiber? magnifying power( Linear / Angular),Resolving power, **Postulates of KMT (S.Q + L.Q)**, Boyle's and Charles from KMT of gases, internal energy, Laws of thermodynamics (Statements),Reversible/Irreversible process, Carnot's engine, Trippl point OF WATER, entropy, Isothermal/Adiabatic process, adiabatic is steeper than isotherm? Carnot theorem, examples of adiabatic process, entropy of a system increase or decrease due to friction, entropy and negative entropy.

## Most Important Long (Theory) Questions

### Chapter No # 2

- Explain the addition of vectors by rectangular components method. **V.V.V.IMP**
- Define scalar and vector product and also describe characteristics of scalar and vector product. **V.V.V.IMP**
- Define torque. Calculate torque due to force acting on a rigid body. **V.V.IMP**
- States of equilibrium

### Chapter No # 3

- State and prove Law of conservation of linear momentum. **V.V.V. V.IMP**
- What is Elastic collision? In case of elastic collision of two bodies in one dimension. Find their velocities after collision. **V.V.V.V.IMP**
- Define projectile motion. Derive formulas for **V.V.IMP**  
(i). Time of flight                      (ii). Horizontal range for projectile                      (iii). Height of flight
- Momentum and Newton second Law of motion.

### Chapter No # 4

- Define conservative field and prove that work done is independent of the path followed by the body in gravitational field. **V.V.V.IMP**
- Define absolute potential energy. Derive its mathematical expression. **V.V.V.V.IMP**
- Work done by a variable force.
- Escape velocity & interconversion of energy. **V.V.IMP**





## Chapter No # 5

- Define Centripetal Acceleration and centripetal force also derive its formula  $F_c = mv^2/r$ . And  $a_c = v^2/r$ . **V.V.IMP**
- Define rotational kinetic energy. Also derive an expression for rotational K.E of a disc and a hoop. **V.V.V.IMP**
- What are Geostationary Satellites? Derive the relation for radius of Geostationary Orbit. **V.V.V.IMP**
- Artificial gravity.
- Real and apparent weight.



## Chapter No # 6

- Define terminal velocity. Show that terminal velocity is directly proportional to the square of radius.
- State and prove Equation of Continuity. **V.V.V.IMP**
- State and prove Bernoulli's equation. **V.V.IMP**
- Applications of Bernoulli's equation (venturi relation and Torricelli, s theorem)

## Chapter No # 7

- Define simple harmonic motion. Prove that projection of particle moving in a circle, on vertical diameter is a SHM. **V.V.V.IMP**
- Define Simple Harmonic Motion. Show that the body of Mass "m" attached to the spring performs Simple Harmonic Motion.
- Define simple pendulum. Prove that the oscillation of simple pendulum is simple harmonic motion. Derive formula for its time period. **V.V.V.V.IMP**
- Define SHM. Prove that total energy remains conserved in mass-spring system, oscillating with SHM. **V.V.V.IMP**

## Chapter No # 8

- Derive Newton's formula for the speed of sound in air and describe the correction by Laplace in it. **V.V.V.IMP**
- What is the effect of temperature on the speed of sound and derive the relation  $V_t = V_0 + 0.61t$ . **V.V.IMP**
- What are stationary waves? Describe the stationary waves produced in a stretched string and prove that their frequencies are quantized. **V.V.V.IMP**
- What is Doppler's effect? Discuss its all cases in details. **V.V.IMP**
- Define and explain the phenomenon of Beats.

## Chapter No # 9

- Explain Young's double slits experiment (Complete). **V.V.V.V.IMP**
- What is Michelson's interferometer? Explain its working and derive its equation. **V.V.V.IMP**
- Explain the diffraction of x-rays by crystals. What are uses of diffraction of x-rays? **V.V.IMP**

## Chapter No # 10

- What is compound microscope? Draw ray's diagram and derive expression for the magnification of compound microscope. **MOST IMP**
- What is Astronomical Telescope? Describe its construction and working. Derive a formula to calculate its magnifying power. **MOST IMP**



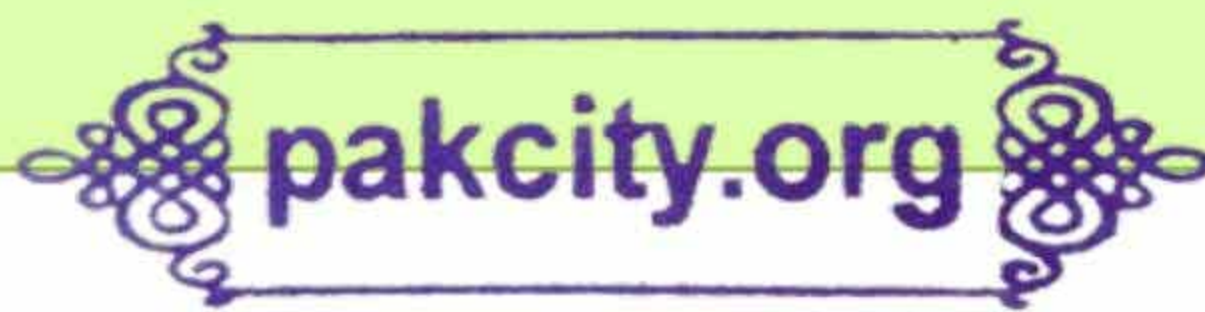
- What is optical fiber? Explain total internal reflection. **IMP**
- What is spectrometer? Describe its construction, working and uses. **V.IMP**

## Chapter No # 11

- Define pressure of a gas Prove that  $P = \frac{2}{3} N_0 < \frac{1}{2} mv^2 >$
- Explain first / second law of thermodynamics. Explain Isothermal and Adiabatic process. **MOST IMP**
- Define Molar Specific Heat of a Gas at constant pressure ( $C_p$ ) and at constant volume ( $C_v$ ). Also prove that  $C_p - C_v = R$ . **MOST IMP**
- What is Carnot engine? Explain the Carnot cycle and calculate the efficiency of Carnot heat engine. **MOST IMP**

## Most Important Numerical Questions

Chapter No	Example No	Numerical No
1	1.1, 1.4, 1.6, 1.7, 1.9 (For S.Q)	1.1, 1.4
2	2.5, 2.6, 2.7, 2.8, 2.9, 2.10, 2.14, 2.15	2.2, 2.3, 2.4, 2.5, 2.6
3	3.1, 3.3, 3.4, 3.8, 3.10, 3.11, 3.12, 3.13, 3.14	3.2, 3.4, 3.6, 3.7, 3.8
4	4.2, 4.3, 4.4, 4.5, 4.7, 4.8	4.2, 4.3
5	5.2, 5.3, 5.5, 5.6, 5.7, 5.9	5.2, 5.6, 5.7
6	6.1, 6.2, 6.4, 6.7, 6.9	6.1, 6.2
7	7.2, 7.3, 7.4, 7.5, 7.8	7.2, 7.3
8	8.3, 8.4, 8.5, 8.6, 8.7	8.1, 8.2, 8.4
9	9.2, 9.3, 9.5, 9.6, 9.8, 9.9	9.2
10	10.3, 10.5, 10.7, 10.8, 10.9	10.1, 10.2
11	11.1, 11.2, 11.5, 11.6, 11.7, 11.10	11.1, 11.2, 11.4, 11.5, 11.1, 11.2, 11.4, 11.5



- **"Bold questions are very important, so make sure to focus on them!"**

نوٹ: "MCQs کے لیے، آپ [Pakcity.org](http://Pakcity.org) کی ویب سائٹ سے گیس پیپر کی مکمل فری PDF فائل ڈاؤن لوڈ کر سکتے ہیں، جس میں پچھلے تمام سالوں کے تمام بورڈ کے پیپر چیپٹر وائز حل کیے گئے ہیں۔"

"پاک سٹی کی ویب سائٹ [www.pakcity.org](http://www.pakcity.org) پر آپ کو تمام کلاسز کے نوٹس، ایم سی کیوز، انتہائی اہم ترین گیس پیپرز، پاسٹ پیپرز اور ٹیسٹ سیریز دستیاب ہیں۔ ہمارے یوٹیوب چینل پر تعلیمی ویڈیوز اور ہیلپ بھی موجود ہیں۔ آپ ہمارے واٹس ایپ گروپ کو جوائن کر کے براہ راست مدد حاصل کر سکتے ہیں۔ ویب سائٹ اور چینل پر وزٹ کریں اور اپنی تعلیمی کامیابی کی طرف قدم بڑھائیں!"