

DELHI PUBLIC SCHOOL, JAMMU
REVISION SHEET FOR CYCLE TEST I (2018-19)

CLASS: XII

SUBJECT: PHYSICS

Topics: Electrostatics, Current electricity, Optics

Very short questions:

- Q1. A convex lens is held in water. What would be the change in focal length?
- Q2. Two thin lenses of power +5D and -3D are in contact. What is the focal length of the combination?
- Q3. State the relation between refractive index and critical angle of the medium.
- Q4. Explain total internal reflection of light with suitable diagram.
- Q5. State reasons for the following:
a) Sky appears blue b) Twinkling of stars.

Short answer type questions:

- Q6. State Gauss Law in electrostatics. Using this law find the value of electric field due to an infinitely small sheet of charge. Also draw the variation of electric field with distance.
- Q7. State the principle of potentiometer. Using this find the internal resistance of the cell and also draw the circuit diagram?
- Q8. Derive an expression for the capacitance of a parallel plate capacitor with dielectric slab introduced between them?
- Q9. Derive an expression for the electric potential due to an electric dipole. and also find the potential at an equipotential point of the dipole?
- Q10. What are equipotential surfaces? Derive an relation between electric field and electric potential?

Long Answer Type Questions:

- Q11. Plot a graph to show variation of angle of deviation as a function of angle of incidence for light rays passing through the prism.
- Q12. State and derive lens makers formulae for double convex lens.
- Q13. Double convex lenses are to be manufactured from a glass of $\mu=1.55$ with both faces of same radius of curvature. What is the radius of curvature required if the focal length is to be 20 cm?
- Q14. Draw a neat and labeled ray diagram of astronomical telescope in normal adjustment position and also writes its magnifying power.
- Q15. State Huygens principle of wave front of light. Using this principle prove the law of refraction of light.