1. What happens to the diameter of the rings if we have higher refractive material instead of air?

Since diameter of the ring is inversely proportional to the square root of refractive index of the medium between the planoconvex lens and plane glass plate, therefore as refractive index increases, diameter of the **rings decrease**

2. How does the pattern looks if we use white light source instead of sodium lamp?

Central dot remains same and colours may be dominant

3. What do you mean by interference of light?

Interference is the **phenomenon in which two waves superpose to form** the resultant wave of the lower, higher or same amplitude.

4. Explain the conditions for sustained interference of light?

Coherent sources

5. What do you mean by coherent sources?

When 2 sources have a fixed phase difference and have same frequency and waveform

6. How Newton's rings are formed in your experiment?

The rings are formed as a result of **interference between light waves reflected from the upper and lower surfaces of the air film** developed between the convex surface of plano convex lens and plane glass plate.

7. Why the central ring is dark?

the central fringe in Newton's rings is dark in the case of the reflected **system because the air film thickness formed at the centre between the glass plate and the lens is zero**.

8. How can you get central bright spot in Newton's rings?

A bright centre in reflected system can be obtained by **selecting lens, medium and the glass plate** in such a way that refractive index of lens

is less than the medium and refractive index of medium is less than the plate.

9. On what factors does the diameter of a ring depend?

Diameter of a ring depends on the wavelength of light used, refractive index of the medium between lens and glass plate, order of the ring and of curvature of plano convex lens.

10. What are the applications of Newton's rings?

Interferometer and Gaussian laser instruments

11. How does the interference phenomenon in Newton's ring experiment and Young's double slit experiment differ?

Central spot/fringe

12. What information do you get from Young's double slit experiment?

Interference and wave nature of light is confirmed.