5. (a) Calculate the minimum no. of lines in a grating which will just resolve in the first order whose wavelengths are 5890 A° and 5896 A°. 5
   (b) Derive one dimensional time dependent schrodinger equation for matter wave. 5
   (c) Explain with neat diagram principle and working of SEM. 5

6. (a) An electron and a photon each have a wavelength of 2A°. What are their momentum and energies ? 5
   (b) Explain construction and working of cathode Ray Oscilloscope. 5
   (c) What are carbon nano tubes ? Write their properties. 5

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