

Class-12 Diwali Home Work 2017 NCERT (Chemistry)

Date-15/10/2017

Submission date-24/10/2017

Chapter-10 & 11 (Halo Alkynes & Halo Arenes AND Alcohols, Phenols and Ethers)

All NCERT Questions, application of all name Reactions including this Chapter.

Class-12 Diwali Home Work 2017 NCERT (Physics)

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Chapter-1 (Electrostatics)

Q.1. State Gauss theorem in electrostatics. Apply this theorem to obtain the expression for the electric field at a point due to an infinitely long, thin, uniformly charged straight wire of linear charge density $\lambda \text{ Cm}^{-1}$.

Q.2. (a) Define electric flux. Write its S.I. units.

(b) Using Gauss's law, prove that the electric field at a point due to a uniformly charged infinite plane sheet is independent of the distance from it.

(c) How is the field directed if (i) the sheet is positively charged, (ii) negatively charge

Q.3 What is the area of the plates of a 2F parallel plate capacitor, given that the separation between the plates is 0.5 cm?

Q.4. Two identical metallic spheres, having unequal opposite charges are placed at a distance of 0.50 m apart in air. After bringing them in contact with each other, they are again placed at the same distance apart. Now the force of repulsion between them is 0.108N. Calculate the final charge on each of them.

Q.5. A charge q is placed at the centre of the line joining two equal charges Q . Show that the system of three charges will be in equilibrium of $q = -\frac{Q}{4}$

Chapter-2 (Current and Electricity)

Q.1 Derive expression for drift velocity of free electrons in a conductor in terms of relaxation time of electrons.

Q.2 Establish a relation between electric current and drift velocity.

Q.3 Deduce Ohm's law using the concept of drift velocity.

Q.4. State Kirchhoff's rules. Apply Kirchhoff's rules to the loops ACAPA and ACAQA to write the expressions for the currents I_1 , I_2 and I_3 in the network.

Optics

Q.5. Kritika's mom is finding difficult to cook in the kitchen as there was power-cut and she told the same to Kritika. She immediately took a plane mirror from her shelf made it stand against a wall such that sun rays were focused into the kitchen due to the reflection

of the mirror. There was some lighting and her mother was able to finish her work.

Read the above passage and answer the following questions:

(i) What are the values shown by Kritika?

(ii) Name the type of mirror used in periscope.

(iii) Give the nature of image in case of plane mirror.

Q.6. One day, Chetan's mother developed a severe stomach ache all of a sudden. She immediately rushed to the doctor, who suggested for an immediate endoscopy test and gave an estimate of expenditure for the same. Chetan immediately contacted his class teacher and shared the information with her. The class teacher arranged the money and reached to the hospital. On realizing that Chetan belonged to a below average income group of family, even the doctor offered concession for the test fee. The test was conducted successfully.

Read the above passage and answer the following questions:

(i) which principle of optics is used in endoscopy?

(ii) Briefly explain the values reflected in the action taken by the teacher.

(iii) In what way do you appreciate the response of the doctor on the given situations?

Q.7. (i) In a Young's double slit experiment, derive the conditions for constructive and destructive interference. Hence, write the expression for the distance between two consecutive bright or dark fringe.

(ii) What change in the interference pattern do you observe, if the two slits S_1 and S_2 are taken as point sources?

(iii) Plot a graph of intensity distribution versus path difference in this experiment.

Q.8. Describe Young's experiment for interference of light. Obtain the formula for fringe width. What is the shape of the fringes?

Q.9. What do you understand by coherent sources? Obtain the expression for fringe width of a bright fringe. Write the expression for the angular width of fringe.

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Last 10 year (2007-2017) board papers

EDGE ACADEMY