

NEW STANDARD ACADEMY

Marks: 60

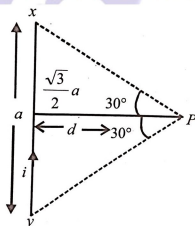
Date : 08-07-24

CLASS : 12TH NEET

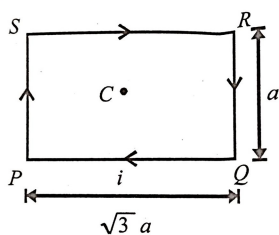
Time: 3 HRS

PHYSICS

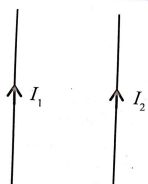
- To obtain maximum intensity of magnetic field at a point the angle between position vector of point and small elements of length of the conductor is
- The magnetic field strength at point Q distance from a long straight wire carrying current I is (where Q lies perpendicular to one end of the conductor)
- Calculate the magnetic field induction at a point $\frac{a\sqrt{3}}{2}$ metre from a straight wire of length 'a' metre carrying a current of i amp. The point is on the perpendicular bisector of the wire.



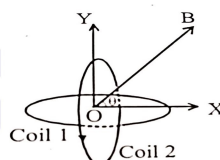
- Find resultant magnetic field at 'C' in the figure shown?



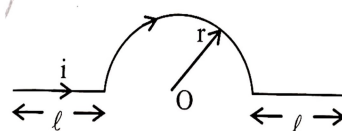
- The vector form of Biot-savart law is ?
- Two long straight parallel wires carry currents I_1 and I_2 respectively, in the same direction. The distance between the wires is R . The magnetic field at the centre of the wires will be?



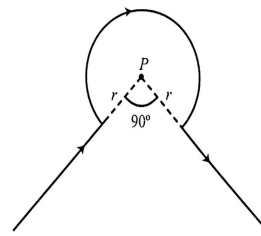
- For the arrangement of fig the magnetic field at the center O will be?



- A current I is flowing in a conductor as shown in the figure. The magnetic induction at point O will be?



- The wire shown in fig. Carries a current of 32A. If $r = 3.14$ cm, the magnetic field at point P will be?



- A circular arc of wire of radius of curvature r subtends an angle of $\pi/4$ radian at its centre. If i current is flowing in it then the magnetic induction at its centre will be?

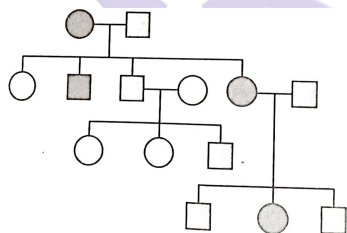
CHEMISTRY

- Transition elements have high enthalpy of hydration. Explain
- Chromium is a typical hard metal while mercury is a liquid explain why?
- Complete the following reaction
 - $\text{CrO}_2\text{Cl}_2 + 2\text{H}_2\text{O} \rightarrow$
 - $\text{Cr}_2\text{O}_7^{2-} + 14\text{H}^+ + 6\text{Fe}^{2+} \rightarrow$
- Why is AgBr used in photography?

- When copper is exposed to atmosphere, a loose layer of green material is formed over its surface. What is this green mass?
- A dark blue precipitate is formed when sodium hydroxide solution is added to copper sulphate solution. The precipitate darkens on heating.
- An accident would occur if a student dissolves KMnO_4 in conc. H_2SO_4 instead of dilute H_2SO_4 Explain
- A hydrated metallic salt (A), light green in colour, on careful heating gives a white anhydrous residue (B) (B) is soluble in water and its aqueous solution reacts with NO to give a dark brown compound (C). (B) gives a brown residue (D) and a mixture of two gases (E) and (F). The gaseous mixture when passed through an acidified KMnO_4 solution discharges the pink colour and when passed through acidified BaCl_2 solution gave a white precipitate. Identify (A), (B), (C), (D), (E) and (F).
- Copper sulphate dissolves in NH_4OH solution but FeSO_4 does not.
- Explain how the colour of $\text{K}_2\text{Cr}_2\text{O}_7$ solution depends on pH of the solution

BIOLOGY

- What are bar bodies? explain its
- Study the figure given below and answer the following questions:**



- What is shown in the diagram?
 - Give an example of this type of inheritance.
- A particular garden pea plant produces only violet flowers
 - Is it homozygous dominant for the trait or heterozygous?
 - How would you ensure its genotype? Explain with the help of crosses
 - (i) How does a chromosomal disorder differ from a Mendelian disorder?

- Name any two chromosomal aberration-associated disorders
 - List the characteristics of the disorders mentioned above that help in their diagnosis.
- How is the phenotypic ratio of F_2 generation in a dihybrid cross different from monohybrid cross?
 - A cross between a normal couple resulted in a son who was haemophilic and a normal daughter. In course of time, when the daughter was married to a normal man, to their surprise, the grandson was also haemophilic.
 - Represent this cross in the form of a pedigree chart. Give the genotypes of the daughter and her husband.
 - Write the conclusion you draw from the inheritance pattern of this disease.
 - A pea plant with purple flowers was crossed with white flowers producing all plants with only purple flowers. On selfing, these plants produced 482 plants with purple flowers and 162 with white flowers. What genetic mechanism accounts for these results? Explain.
 - Give a genetic explanation for the following cross. When a tall pea plant with round seeds was crossed with a dwarf pea plant with wrinkled seeds then all the individuals of F_1 population were tall with round seeds. However, selfing among F_1 population led to a 9:3:3:1 phenotypic ratio.
 - (i) Why are thalassemia and haemophilia categorised as Mendelian disorders? Write the symptoms of these diseases. Explain their pattern of inheritance in humans.
 - What are the contributions of Morgan and Sturtevant in the area of Drosophila genetics? Discuss.