

NEW STANDARD ACADEMY

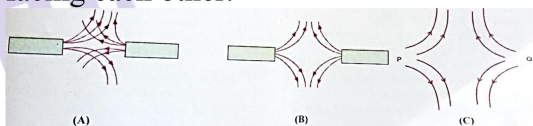
CLASS : 10TH

Marks: 80

Time: 3 HRS

PHYSICS

1. What is meant by magnetic field ? Define a magnetic field line.
2. Draw a uniform magnetic field. What does the degree of closeness of magnetic field lines near the poles signify?
3. At what place of the magnet are the magnetic field lines denser? What does crowding of magnetic field lines indicate?
4. How is the direction of magnetic field at a point determined?
5. What is the direction of magnetic field lines outside a bar magnet? Identify the poles of a magnet in the figure.
6. Magnetic lines of force of two pairs of magnet are shown in figures A and B. Out of these two figures, which one represents the correct pattern of field lines. Name the poles of magnets facing each other.



7. A compass needle shows deflection when brought near a current carrying conductor. Why?
8. How can it be shown that magnetic field exists around a wire through which direct current is passing?
9. State the rule used to determine the direction of magnetic field produced around a straight conductor carrying current.
10. What is a solenoid? Draw a neat diagram of solenoid.

CHEMISTRY

1. Out of zinc and iron, which evolves hydrogen more readily on reacting with dilute HCl?

2. Name a metal which is a poor conductor of electricity.
3. Why do most of the metals appear dull ?
4. Name a metal other than aluminium that is covered with a layer of oxide film.
5. What is aqua regia ? How is it useful?
6. How are bonds formed between metals and non-metals? What is the name of these bonds?
7. Why do salts have high melting and boiling points?
8. What is the difference between Cl⁻ ion and Cl⁻(aq) ion?
9. The atomic number of element X is 8 and that of element Y is 12. Write the symbols of the ions that are expected to be formed from these
10. How are the ions formed above related to each other

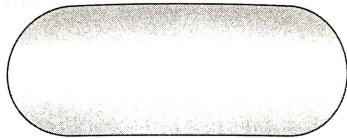
BIOLOGY

1. Write the common food chain of a pond ecosystem.
2. Why are crop field known as artificial ecosystem?
3. Explain the role of decomposers in the environment.
4. We do not clean ponds or lake , but an aquarium needs to be cleaned why?
5. In a food chain of frog, grass, insect and snake, assign trophic level to frog.
6. The first trophic level in a food chain is always a green plants. why?
7. Write one aquatic / pond food chain.
8. Explain trophic level.
9. Consider the food chain: Grass → Deer → Lion. What will happen if lions are removed from the above food chain?

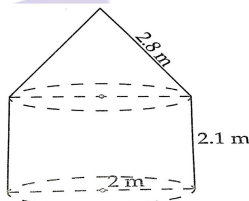
10. Name two major ecosystems of the world.

MATHS

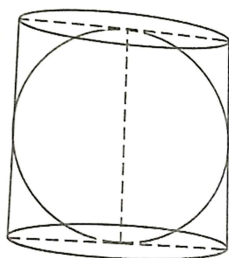
- Two cubes each of volume 27 cm^3 are joined end to end. Find the surface area of the resulting cuboid.
- The adjoining figure shows a medicine capsule, which is in the shape of a cylinder with two hemispheres stuck to each of its ends. If the length of the capsule is 14 mm and the diameter of the capsule is 5 mm , find its surface area.



- In the adjoining figure, a tent is in the shape of a cylinder surmounted by a conical top. The cylindrical part is 2.1 m high and the conical part has slant height 2.8 m . Both the parts have same radius 2 m . Find the area of the canvas used in making the tent. (use $\pi = \frac{22}{7}$).

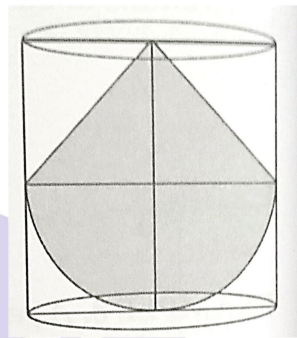


- In the adjoining figure, a sphere is inscribed in a cylinder, prove that the surface of the sphere is equal to the inner curved surface of the cylinder.



- A solid toy is in the form of a hemisphere surmounted by a right circular cone. The height of the cone is 2 cm and the diameter of the base is 4 cm . Determine the volume of the toy. If a right circular cylinder circumscribes the toy (shown in

the adjoining figure), find the difference of the volumes of the cylinder and the toy. (Take $\pi = 3.14$)



- If the volume and the (curved) surface area of a hemisphere are numerically equal, then what is the length of diameter of hemisphere?
- Two right circular cones have their heights in the ratio $1 : 3$ and radii in the ratio $3:1$, what is the ratio of their volumes?
- The curved surface area of a right circular cylinder is 176 cm^2 and its volume is 1232 cm^3 . What is the height of cylinder?
- From solid cube of side 7 cm , a conical cavity of height 7 cm and radius 3 cm is hollowed out. Find the volume of the remaining solid.
- A pen stand made of wood is in the shape of a cuboid with four conical depressions to hold pens. The dimensions of the cuboid are 15 cm by 10 cm by 3.5 cm . The radius of each of the depression is 0.5 cm and the depth is 1.4 cm . Find the volume of the wood in the entire stand.

