

MOCK CBSE BOARD EXAM



SCIENCE

CLASS X

(PAPER 2)

(AS PER THE GUIDELINES OF CBSE)

Time: 2½ Hours

Max. Marks: 60

General Instructions

1. The question paper comprises of two sections A and B. You are supposed to attempt both the sections.
2. All questions are compulsory.
3. There is no overall choice. However, internal choice has been provided in all the three questions of five marks category. Only one option in such questions is to be attempted.
4. All questions of section A, and all questions of section B are to be attempted separately.
5. Questions 1 to 6 in section A, and 17 to 19 in section B are short questions. These carry one mark each.
6. Questions 7 to 10 in section A, and 20 to 24 in section B are short answer type questions; and carry two marks each.
7. Questions 11 to 14 in section A, and 25 to 26 in section B are also short answer type questions; and carry three marks each.
8. Questions 15 and 16 in section A, and question 27 in section B are long answer type questions; and carry five marks each.

ANY CANDIDATE GIVING / SEEKING / RECEIVING ASSISTANCE OR FOUND COPYING WILL BE IMMEDIATELY DISQUALIFIED.

Are you prepared for a competitive tomorrow?

NATIONAL BENCHMARKING TEST

Log on to

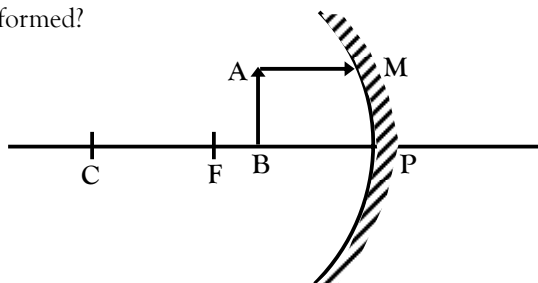
nbt.TCYonline.com

All the best!

www.steps.tcyonline.com

SECTION - A

1. A ray of light AM from an object AB is incident on a mirror as shown in the given figure. What will be the nature of the image formed?

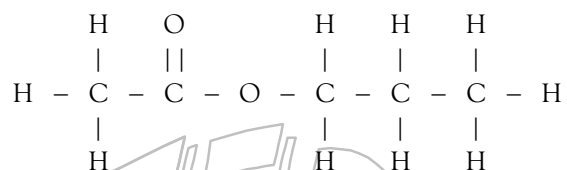


2. A green layer is gradually formed on a copper plate left exposed to air for a week in a bathroom. What could this green substance be?
3. A non-metal X forms an acid with formula HX. It belongs to period 3 of the modern periodic table. What is the name of an acid formed by X?
4. Aqueous solution of alkalis conducts electricity. Why?
5. Are the laws of reflection applicable to plane surfaces also valid for curved surfaces?
6. A wire of uniform area of cross-section is stretched to four times its original length. By what factor does its resistivity change?
7. The flow of current in a circular loop of a wire creates a magnetic field at its centre. How can existence of this field be detected? Name the rule which helps to predict the direction of this magnetic field.
8. What are the various factors which may affect the resistance of an object, if all physical conditions such as temperature, pressure, etc are held constant?
9. Fresh milk has a pH of 6. How do you think the pH will change, as it turns into curd? Explain your answer.
10. Can chips fried in saturated fat get rancid? Why?
11. When a drop of methyl orange is added to aqueous aluminium chloride solution, which colour change takes place and why?
12. Give scientific reasons:
- Why does the sky appear blue during the day time?
 - Why the sky looks red and orange during the times of sunrise and sunset?
13. An object 5 cm high is held 25 cm away from a converging lens of focal length 10 cm. Draw the ray diagram and find the position, size and nature of the image formed.
14. Francium is an element located in group I and period VII of the modern periodic table. Give three chemical properties of Francium, keeping in view, its position in the periodic table.
15. Give reasons for the following:
- Alcohol supplied for industrial purposes is mixed with poisonous substances like methanol, pyridine, copper sulphate, etc.

- (ii) Covalent compounds do not conduct electricity.
 (iii) Covalent compounds are mostly gases or liquids.
 (iv) Draw the structure of a molecule of
 (a) Cyclohexane
 (b) Benzene

OR

- (i) Compounds A - D were taken in 4 separate test tubes and exhibited different properties as given below. Identify the compounds:
 (a) Compound 'A' burns in oxygen to give CO_2 and H_2O and has a molecular formula C_2H_6 .
 (b) Compound 'B' gives a saturated compound C_2H_6 in the presence of nickel catalyst.
 (c) Compound 'C' is used in alcoholic drinks and gives ethane in the presence of H_2SO_4 .
 (d) Compound 'D' has a fruity odour and gives an alcohol and a carboxylic acid in the presence of a base.
- (ii) The structural formula for an ester is



Write the formula of the acid and the alcohol from which it is formed.

16. (a) You have three resistors. The second resistor has a resistance twice that of the first one. Also, the third resistor has a resistance one fourth that of the first. If the first resistor has resistance R , how will you connect these resistors for obtaining a total resistance of $\frac{11}{5}R$? Show this connection by a diagram.
- (b) If a wire is stretched to make it 1% longer, what is the percentage change in its resistance?

OR

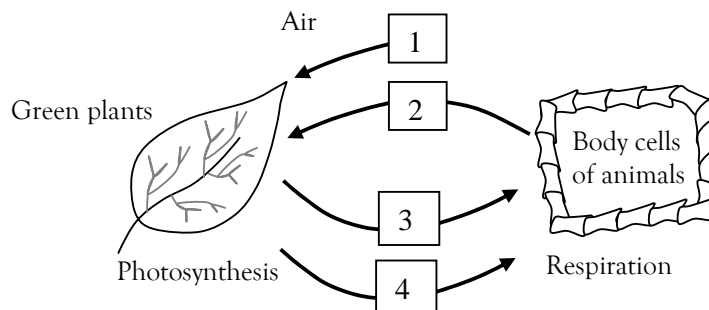
- (i) What is the smallest charge possible? How will you define 1 ampere? An electric bulb draws a current of 0.3 A from the voltage source at 220 volts. Calculate the magnitude of electric charge flowing through it in half an hour.
- (ii) Why does the filament of an electric lamp glow, whereas the wire through which the electric current flows doesn't?

SECTION B

17. After a vigorous exercise, you may experience cramps in your leg muscles. Why does this happen? 1
18. Which organ secretes a hormone when the blood sugar rises. Name a digestive enzyme released by this organ. 1

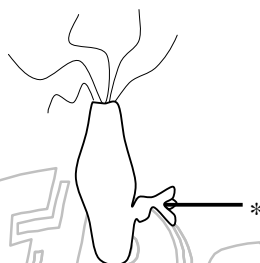
19. Name two gases, other than carbon-di-oxide, that are produced during burning of fossil fuel and contribute towards acid rain formation.

20.



Arrange the following words into the blanks 1 → 4 in the above diagram: O_2 , CO_2 , $C_6H_{12}O_6$, H_2O .

21. How is killing of snakes related to crop destruction?
22. Name the organism shown in the figure. Also name the structure marked as (*). Name the mode of reproduction. Does it give rise to variations?



23. Purple flowered (PP) plants are crossed with white flowered (pp) plants. What percentage of F_1 progeny will be white-flowered? Name the cross and give the ratio of purple flowered: white flowered plants in F_1 and in F_2 generations.
24. In what terms biodiversity of an area measured? What are 'Biodiversity hot spots'? What is the immediate effect of loss of biodiversity from an area?
25. (i) Which are the two main types of reproduction in living organisms?
(ii) Classify the following under these two types:
Amoeba, frog, earthworm, yeast.
26. How can cow dung be used as a
(a) pollution - causing fuel?
(b) pollution - free fuel?
Give a schematic diagram of using cow dung as a pollution free fuel.
27. Draw the diagram of human heart, showing the passage of blood through its various chambers. What do you mean by 'double circulation' of blood in humans and how does it help?

OR

- (a) What is the structural and functional unit of kidney?
- (b) Draw a well labeled diagram of the above mentioned organ.
- (c) Explain the mechanism of formation of urine.