

10th CLASS MARCH – 2020

SCIENCE - I

Time : 2.45 Hours]

[Max. Marks : 50

PHYSICS+CHEMISTRY PART-A (30 M)

I. Answer ALL the following questions.

12 x ½ = 6 M

1. What is the $(n + l)$ value of $4f -$ orbital?
2. In which units is atomic radius measured?
3. How many σ and π Bonds are there in acetylene molecule?
4. Based on the reactivity arrange the metals? Given below Mg, Ca, Na, Al, K.
5. Write the IUPAC name of the following compound

$$\text{H}_3\text{C} - \text{CH}_2 - \text{CH}_2 - \underset{\text{O}}{\underset{||}{\text{C}}} - \text{CH}_3$$
6. Write the ore's of Iron?
7. What is meant by thermal equilibrium?
8. When angle of incidence of light ray is greater than critical angle, what happens?
9. Give mathematical expression for power of a lens?
10. Can we create a rainbow artificially?
11. How can we measure electric current?
12. What is solenoid?

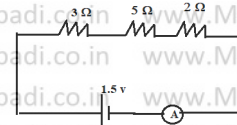
SECTION - II

II. Answer ALL the following questions.

8 x 1 = 8 M

13. When Ethanoic acid added to a solution of substance "X", a colourless and odourless gas "Y" is liberated. The gas "Y" turns lime – water milky. Write the Reaction for above statement.
14. What is poling?
15. Draw the structural diagram of Ammonia molecule as per the valence – shell electron pair theory
16. In which of three $4d$, $5p$, $5s$ orbital's the electron's will be filled first? Why.
17. What is the temperature of mixture of 10g of steam at 100°C is mixed with 50g of ice at 0°C ?
18. Draw the different types of convex lens?
19. What can we do correct myopia?

20. Find the quantity of current in the above circuit?



SECTION – III

III. Answer ALL the following questions

8 x 2 = 16 M

21. Plaster of Paris should be stored in a moisture – proof container Explain why?

22. Which rule is violated in the Electronic configuration $1s^0 2s^2 2p^4$?

23. Explain the properties of “covalent compounds”

24. Alkanes are considered as Paraffins so they under go substitution reactions but not addition reactions.

Explain with suitable Examples

25. Write lens maker’s formula and explain the terms in it?

26. Complete the ray diagram when an object is place between F_2 and $2F_2$ for convex lens?

27. Write any two situations to observe dispersion of light in your daily life?

28. A force of 8N acts on a rectangular conductor 20 cm long placed perpendicular to a magnetic field.

Determine the magnetic field induction if the current in the conductor is 40 A?

SECTION – IV

III. Answer ALL the following questions

5 x 4 = 20 M

29. (a) Explain “Four quantum” Number’s with Examples

(OR)

b) What is Ionization Energy? What are the factors which influence ionization energy

30. (a) Write an activity to show that all metal carbonates and hydrogen carbonates react with acids to give a corresponding salt.

(OR)

b) Roasting and calcinations are the methods to extract from ores what is the difference between Roasting and Calcination.

31. a) Write the factors that effect the process of evaporation Explain with suitable examples?

(OR)

b) How are the optical fibres working? What are the various uses of optical fibres in our daily life?

32. a) How do you appreciate the working of ciliary muscles in the eye?

(OR)

b) State ohm's law. Suggest an experiment to verify it and explain the procedure?

33. a) Draw a neat diagram of electric motor Name the parts?

(OR)

b) Draw the structure of molecules by Lewis method.

