

GENERAL SCIENCE, Paper - I

(English version)

Parts A and B

Time : 2 Hours 45 min.]

[Maximum Marks : 40

Instructions :

1. In the time duration of 2 Hours 45 minutes, 15 minutes of time is allotted to read and understand the Question paper.
2. Answer the Questions under **Part-A** on separate answer book.
3. Write the answers to the Questions under **Part-B** on the Question paper itself and attach it to the answer book of **Part-A**.

Part - A

Time : 2.15 Hours

Marks : 35

Instructions :

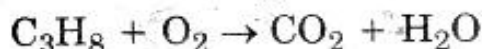
1. **Part - A** comprises of **three** sections I, II and III.
2. **All** the questions are **compulsory**.
3. There is no overall choice. However, there is an internal choice to the questions under Section - III.

SECTION - I

7×1=7

NOTE :

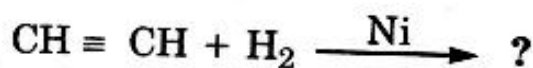
1. Answer **all** the questions.
 2. Each question carries 1 mark.
 3. Answer each question in 1 or 2 sentences.
1. Give an example to explain that evaporation is a cooling process.
 2. Balance the equation.



3. What happens to the image, if a convex lens is made up of two different transparent materials, as shown in figure ?

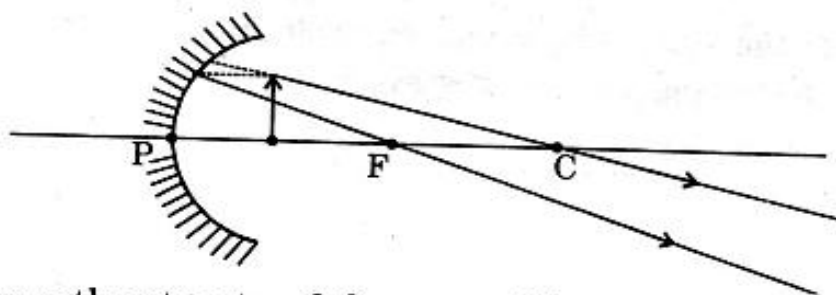


4. $\text{CH}_2 = \text{CH}_2 + \text{H}_2 \xrightarrow{\text{Ni}} \text{CH}_3 - \text{CH}_3$ is an addition reaction.



Predict and write the products.

5. Complete the diagram and draw the image.



6. Draw the structural diagram of Ammonia molecule as per the valence-shell electron pair repulsion theory.
7. Why the soil of agricultural lands get tested for pH ?

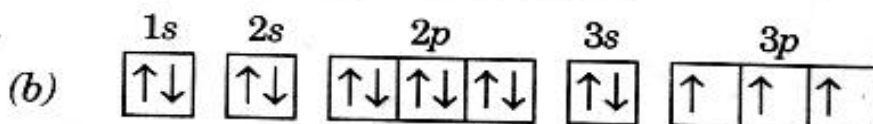
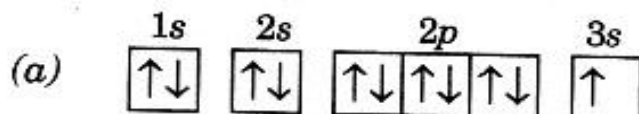
SECTION - II

6×2=12

- NOTE :**
1. Answer **all** the questions.
 2. Each question carries **TWO** marks.
 3. Answer each question in 4-5 sentences.

8. Write the products of given reactions, if any. Give reasons.
 $\text{FeCl}_2 + \text{Zn} \rightarrow$
 $\text{ZnCl}_2 + \text{Fe} \rightarrow$
9. Why Dobereiner, Newlands and Mendeleeff were not 100% successful in their classification of elements ? Why the modern table is relatively a better classification ? Predict the reason.
10. Why water drops (dew) form on flowers and grass during morning hours of winter season ?

11. Observe the electronic configurations given below and write the group and period numbers of those elements.



12. Draw the experimental set-up to verify that $\frac{V}{I}$ is constant for a Conductor.
13. Least distance of distinct vision of a person is observed as 35 cm. What lens is useful for him to see his surroundings clearly? Why?

SECTION - III

4×4=16

NOTE : 1. Answer **all** the questions.

2. Each question carries **4** marks.

3. There is internal choice for each question.

Only one option from each question is to be attempted.

4. Answer each question in 8-10 sentences.

14. Write the types of Allotropes of Carbon. Give any three examples of each.

OR

Write any 4 characteristic features of homologous series of Organic compounds.

15. An object of height 5 cm is placed at 30 cm distance on the principal axis in front of a concave mirror of focal length 20 cm. Find the image distance and size of the image.

OR

Explain the behaviour of light rays in any four situations of their incidence on a Convex lens .

16. List out the materials required for the Oersted experiment of Electromagnetism. Write the procedure of the experiment. What do you understand by this experiment?

OR

What are the materials required for the experiment to show the chemical decomposition of water? Write the procedure of the experiment. Name the products which we get in this reaction.

17. Read the information given in the table and answer the following questions.

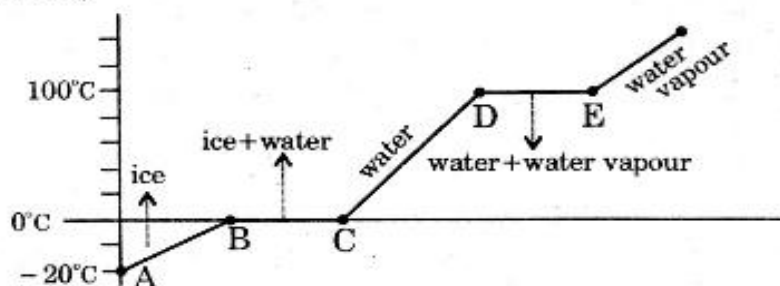
<i>Solution</i>	<i>pH value</i>	<i>Reaction with Phenolphthalein solution</i>	<i>Reaction with Methyl orange solution</i>
HCl	1	No colour change.	Turns into red colour.
Distilled water	7	No colour change.	No colour change.
NaOH	13	Turns into pink colour.	Turns into yellow colour.
Lemon juice	2.5	No colour change.	Turns into red colour.
NaCl	7	No colour change.	No colour change.
Baking Soda	8	Turns into pink colour.	Turns into yellow colour.

- List out the acids in the above table.
- What is the nature of the solution which gives pink colour with Phenolphthalein solution ?
- List out the neutral solutions in the above table.
- Name the strongest acid and the strongest base among the given solutions.

OR

The graph shows the values of temperature, when ice is heated till it becomes water vapour. Observe the graph and answer the following questions.

(Note that the figure is not completely quantitative and also not to the scale. It is purely qualitative)



- At what temperature, ice converts into water ?
- What does \overline{DE} represent ?
- What is the range of temperature of liquid water ?
- Which part of the graph represents change of state from ice to water ?

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(English version)

Parts A and B

Time : 2 Hours 45 min.]

[Maximum Marks : 40

Instructions : Write the answers to the questions in this **Part-B** on the Question paper itself and attach it to the answer book of **Part-A**.

Part - B

Time : 30 minutes

Marks : 5

Instructions :

- (i) Answer **all** the questions.
- (ii) Each question carries $\frac{1}{2}$ mark.
- (iii) Answers are to be written in question paper only.
- (iv) Marks will **not** be awarded in any case of over-writing, rewriting or erased answers.

I. Write the **CAPITAL LETTER** (A, B, C, D) showing the correct answer for the following questions in the brackets provided against them.

1. Formation of dew is an example for

[]

- (A) Boiling.
- (B) Melting.
- (C) Condensation.
- (D) Evaporation.

2. $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$ is an example for []
- (A) Chemical combination.
 - (B) Chemical decomposition.
 - (C) Chemical displacement.
 - (D) Chemical double displacement.
3. Which of the following does not lie in the plane of reflection ? []
- (A) Reflecting surface.
 - (B) Incident ray.
 - (C) Normal at the point of incidence.
 - (D) Reflected ray.
4. Antacids are used []
- (A) to produce acid in the stomach.
 - (B) to produce water in the stomach.
 - (C) to neutralise the excess base in the stomach.
 - (D) to neutralise the excess acid in the stomach.
5. Principal Quantum number 3 refers to []
- (A) M - main shell
 - (B) *f* - sub shell
 - (C) N - main shell
 - (D) *d* - sub-shell

6. Number of vertical columns in the modern periodic table are (As per IUPAC notation). []
- (A) 7
- (B) 8
- (C) 10
- (D) 18
7. If the refracted ray from a convex lens is travelling parallel to the principal axis, then image distance is []
- (A) Equal to object distance.
- (B) infinity.
- (C) Equal to focal length of the lens.
- (D) Equal to radius of curvature of the lens.
8. Effect of dispersion of light among the following is []
- (A) Mirage.
- (B) Blue colour of the sky.
- (C) Rainbow.
- (D) Twinkling of stars.

[4]

9. The equivalent resistance due to series connection of $10\ \Omega$ and $10\ \Omega$ resistors is []

(A) $5\ \Omega$

(B) $10\ \Omega$

(C) $0\ \Omega$

(D) $20\ \Omega$

10. Which of the following electrical devices works on the principle of electro-magnetic induction ? []

(A) Electric fan.

(B) Electric bulb.

(C) Electric cooker.

(D) L.E.D.
