

**0-14**

Roll No.....

Total No. of Questions : **16+16**]

[Total No. of Printed Pages : **15**

**XPJDDXII**

**59004-Y**

**SCIENCE-I**

**(Physics and Chemistry)**

**(New/Old Course)**

**Time : 2 Hours + 15 Minutes extra to read the question paper]**  
**[Maximum Marks : 56**

**NOTE :-** The questions in the question paper are based on revised and pre-revised syllabus marked as "**New Course**" and "**Old Course**" respectively and candidates are advised to appear in the relevant course meant for them. Candidates who may attempt the questions partly from "**New Course**" and partly from "**Old Course**" will not be awarded. Candidates are also advised to record "**New Course**" or "**Old Course**" as the case may be on the front page of the answer-book.

**(NEW COURSE)**

**Section-A**

**(Physics)**

**(Long Answer Type Questions)**

1. What is the need of combining different resistors ? Derive the relation for the equivalent resistance of three resistances connected in series.

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Turn Over

( 2 )

Or

Define Electric potential and Potential difference. Give S.I. unit of electric potential. Name the instrument used to measure potential difference.

6

**(Short Answer Type Questions)**

2. Give the uses of Concave and Convex mirrors.

Or

Define power of a lens. What is its Unit ? Define 1 diopetre. 4

3. What is meant by Reflection ? State and explain the laws of reflection of light.

Or

Why do we prefer a convex mirror as rear view mirror in vehicles ? 4

4. A person is unable to read a book properly. From which defect is he suffering ? How is it corrected ?

Or

Why stars show twinkling effects while planets do not ? 4

**(Very Short Answer Type Questions)**

5. Draw the course of rays in convex lens when the object is at infinity. 2

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6. What is Nuclear Fission ?
7. What are the uses of Electromagnets ?

**(Multiple Choice Questions)**

8. Choose the correct/most appropriate answer in each of the following and write it in your answer-book :

(a) Amount of light entering the eye depends upon the size of :

- (i) Pupil
- (ii) Iris
- (iii) Cornea
- (iv) Retina

1

(b) Fuse and switches must be connected to :

- (i) Live wire
- (ii) Neutral wire
- (iii) Earth wire
- (iv) None of these

1

lines of force :

Define Electric potential  
of electric potential  
note: sometimes intersect each other

(iii) never intersect each other

(iv) none of these

(d) A good fuel should :

(i) provide large amount of energy

(ii) be easy to store and transport

(iii) be easily accessible

(iv) all of these

**Section-B**

**(Chemistry)**

**(Long Answer Type Questions)**

9. Draw the electron dot structure for :

(a) Methane

(b) Ethane

(c) Propane.

Or

Explain the mechanism of cleansing action of soap.

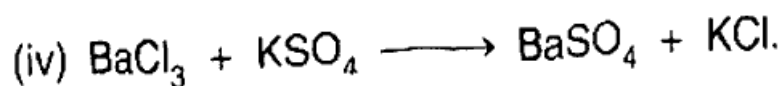
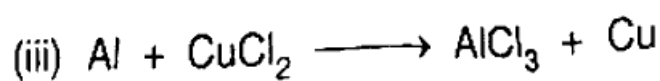
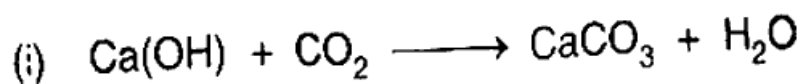
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**(Short Answer Type Questions)**

10. Why are decomposition reactions called the opposite of combination reactions ? Write equations for these reactions.

Or

Write the balanced chemical equations for the following reactions :



4

( 6 )

11. What are two properties of carbon compounds which lead to the huge number of carbon compounds we see around us ?

Or

Give important uses of ethanoic acid.

4

12. How could the modern periodic table remove various anomalies of Mendeleev's periodic table ?

Or

Mention some important drawbacks of the Mendeleev's periodic table.

4

**(Very Short Answer Type Questions)**

13. Give *two* uses of metals and non-metals. 2
14. Give uses of Bleaching power. 2
15. Give *two* ways to prevent rusting of iron. 2

**(Multiple Choice Questions)**

16. Choose the correct/most appropriate answer in each of the following and write it in your answer-book :

(a) Addition of oxygen to a substance in a chemical reaction is termed as :

- (i) Reduction
- (ii) Oxidation

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(iii) Displacement

(iv) Combination

1

(b) The maximum value of pH of a solution on pH scale is :

(i) 14

(ii) 15

(iii) 10

(iv) 7

1

(c) An element reacts with oxygen to give a compound with a high melting point. This compound is also soluble in water.

The element is likely to be : <https://www.jkboseonline.com>

(i) Calcium

(ii) Carbon

(iii) Silicon

(iv) Iron

1

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(d) Which metal is not stored under oil ?

(i) Sodium

(ii) Potassium

(iii) Lithium

(iv) Aluminium

1

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**(OLD COURSE)**

**Section-A**

**(Physics)**

**(Long Answer Type Questions)**

1. Give the difference between External combustion engine and Internal combustion engine.

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Turn Over

( 10 )

Or

Describe the process by which the energy is released by the sun. 5

2. Explain the working of an electric generator.

Or

Describe the Fleming's left-hand rule. 5

**(Short Answer Type Questions)**

3. Give the difference between Boiling and Evaporation. 3

4. Define compression, rarefaction and frequency. 3

5. Name the *two* defects of vision and explain one. 3

6. Give the names of Indian satellites launched from erstwhile USSR for remote sensing. 3

**(Very Short Answer Type Questions)**

7. (a) What is Current ? 1

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- (b) What type of lens is used for correcting the hypermetropia ? 1
- (c) What type of waves are produced in air ? 1

**(Multiple Choice Questions)**

8. Choose the correct/most appropriate answer :

(a) The heat we feel in sun-light is due to presence of :

- (i) Infrared light
- (ii) Ultra-violet light
- (iii) Both infrared and ultra-violet
- (iv) None of these 1

(b) The quantity of heat required to change the temperature of 1 kg of substance by  $1^{\circ}\text{C}$  is called :

- (i) Specific heat
- (ii) Total energy
- (iii) Latent heat
- (iv) Heat of fusion 1

( 12 )

(c) Latent heat of melting of ice is :

(i) 335/2J

(ii) 336/2J

(iii) 337/2J

(iv) 340/2J

1

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**Section-B**

**(Chemistry)**

**(Long Answer Type Questions)**

9. How will you make Soap ?

Or

How Vulcanised rubber is different from Natural rubber ?

10. Define Exothermic and Endothermic reaction with examples.

Or

Describe storage cell with suitable example.

**(Short Answer Type Questions)**

11. How methane is prepared in the laboratory ?

12. Give the uses of water.

13. Define Acidic Rain.

14. What are the constituents of a bio-gas ?

**(Very Short Answer Type Questions)**

15. (i) Name *two* sources of radioactive pollution. 1
- (ii) Name *two* main components of air. 1
- (iii) What are the fuels produced from water ? 1

**(Multiple Choice Questions)**

16. Choose the correct/most appropriate answer from the alternatives given below against each and write it in your answer-book :

(a) Sea weeds are sources :

- (i) Iodine
- (ii) Chlorine
- (iii) Nitrogen
- (iv) Phosphorous 1

(b) Rusting of iron can be prevented by coating with :

- (i) Zinc
- (ii) Copper
- (iii) Cadmium
- (iv) All of these 1

( 15' )

(c) Compounds of carbon which have ~~fruity smell~~ and used in cold drinks, ice-creams, sweets and perfumes are called:

(i) Esters

(ii) Alcohols

(iii) Ketones

(iv) Aldehydes

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