EDUTECH ACADEMY ®
NURTURING THE FUTURE...
— Classes 5 to 10 —

**SET B**

# N 714

**Seat No.** | | | | | | | |

**2025 XII 27 1100 – N 714 – SCIENCE & TECHNOLOGY PART I (71)**

## (REVISED COURSE)

**Time : 2 Hours** **(Pages 5)** **Max. Marks : 40**

---

**Note :- (i) It is necessary to solve all the questions.**

**(ii) Draw neat and labelled diagrams wherever necessary.**

**(iii) Start every new main question on separate page.**

**(iv) Figures on the right indicate marks.**

**(v) For Each Multiple Choice Question (1.B), ONLY first answer will be considered.**

**(vi) Write answer of each MCQ with option number.**

**Eg. i) a……. ii) c……**

**Q.1(A) Choose the proper alternative and fill in the blanks:** **5**

**(1)** A boy is whirling a stone tied to a string in a horizontal circular path. If the string breaks, the stone

(a) will move along a straight line towards the centre of the circular path.

(b) will move along a straight line perpendicular to the circular path away from the boy.

(c) will move along a straight line tangential to the circular path.

(d) will continue to move in circular path.

**(2)** The scientist who did not contribute in the construction of periodic table?

(a) Moseley (b) Mendeleev (c) Dobereiner (d) Democritus

**(3)** The amount of heat energy required to raise the temperature of a unit mass of an object by 1°C is called the---------- .

(a) Specific heat of object (b) latent heat of fusion

(c) latent heat of vaporization (d) specific latent heat of vaporization

**(4)** The change in _____ of light rays while going from one medium to another is called refraction.*

(a) velocity (b) frequency (c) wavelength (d) direction

**(5)** During galvanisation, iron metal is given a thin coating of one of the following metals. This metal is :

(a)chromium (b) tin (c) zinc (d) copper

**(B) Attempt the following:** **5**

**(1) Find the odd one out:** **1**

Boron, Silicon, Arsenic, Sodium

**(2) State 'True' or 'False', if 'False' correct it:** **1**

In a chemical equation, the reactants are written on the right hand side while the products on the left hand side.

**(3) Write the correlated terms:** **1**

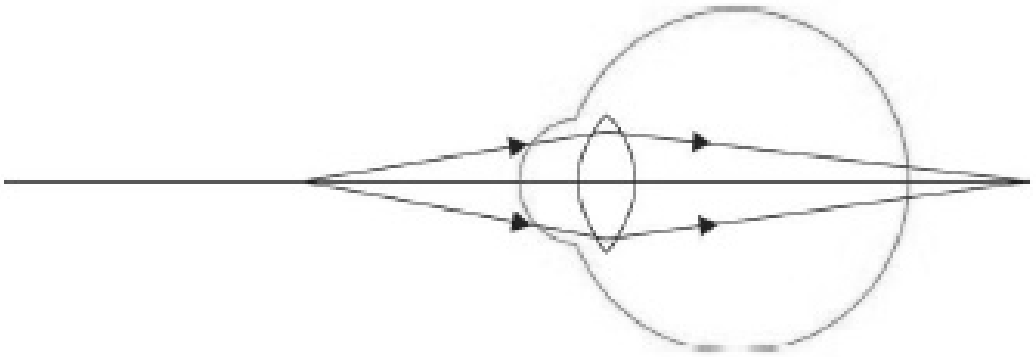
Mass: kg::Weight: _____

**(4) Name the following:** **1**

The heat absorbed at constant temperature during transformation of solid into liquid

**(5) Answer the following in one line:** **1**

Name the defect shown in the diagram.



**Q.2 (A) Give reasons:(Any Two)** **4**

**(1)** Atomic radius goes on decreasing while going from left to right in a period.

**(2)** In practice the unit kWh is used for the measurement of electrical energy, rather than joule.*

**(3)** Anodes need to be replaced from time to time during the electrolysis of alumina.*

**(B) Answer the following:(Any Three)** **6**

**(1)** Heat energy is being produced in a resistance in a circuit at the rate of 100 W. The current of 3 A is flowing in the circuit. What must be the value of the resistance?*

**(2)** Define: Principal focus of concave lens

**(3)** (i) How many methylene units are extra in the formula of the fourth member than the third member of the homolous series of alcohols?
(ii) Which product is formed by the combustion of elemental carbon?*

**(4)** Which of this element belong to the period 3? Write their electronic configuration.

$_{3}Li$, $_{14}Si$, $_{2}He$, $_{15}P$

**(5)** Which types of telescopes are orbiting around the earth? Why it is necessary to put them in space?*

**Q.3 Answer the following:(Any Five)** **15**

**(1)** Observe the following diagram and answer the questions below:

science1_dia1.jpg2

(i) What are the masses of the objects mentioned above?
(ii) What is the distance between the two centres?

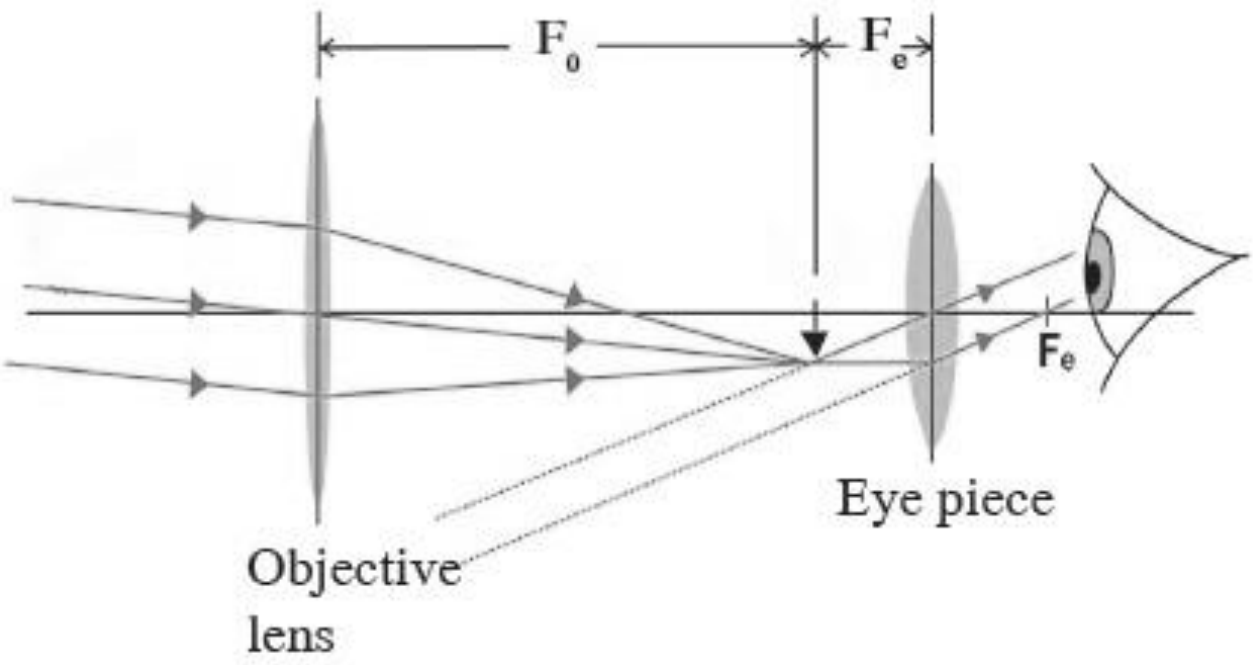
(iii) What would be the expression of gravitational force between them?
(iv) Why gravitation constant is called universal constant?
(v) What will happen to gravitational force between two objects if mass of the one is doubled?
(vi) What is the value of universal constant in SI?

**(2)** If the speed of light in a medium is $1.5 \times 10^8$ m/s, what is the absolute refractive index of the medium? (Speed of light in vacuum = $3 \times 10^8$ m/s)

**(3)** Two tungsten bulbs of wattage 100 W and 60 W power work on 220 V potential difference. If they are connected in parallel, how much current will flow in the main conductor?*

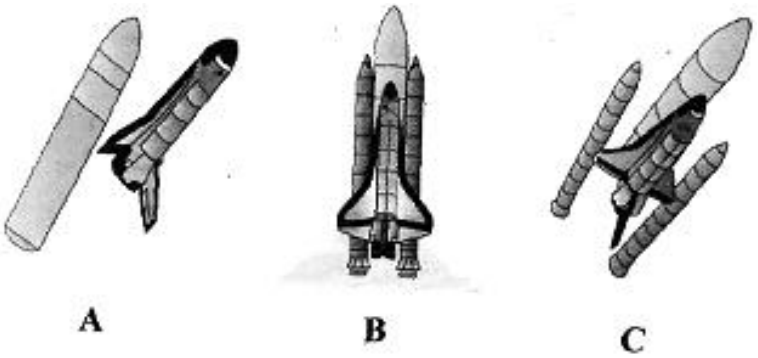
**(4)** Liquid ammonia is used in ice factory for making ice from water. If water at 20 °C is to be converted into 2 kg ice at 0 °C, how many grams of ammonia are to be evaporated?
(Given: The latent heat of vaporization of ammonia= 341 cal/g)*

**(5)** i) Name the instrument having the lens arrangement as shown in the following diagram.
Ii) State the use of the instrument shown.
Iii) Why has the objective lens large diameter & larger focal length?




**(6)** Divide the metals Cu, Zn, Ca, Mg, Fe, Na, Li into three groups, namely reactive metals, moderately reactive metals and less reactive metals.*

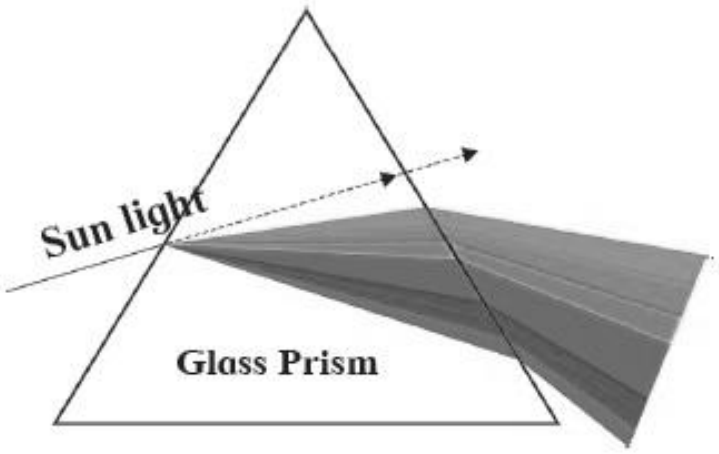
**(7)** Arrange the following figures in order such that they represent the stages involved in a launching of a satellite in space and explain the stages in brief.



A B C

D E

**(8)**




i) Define the phenomenon shown in figure.

ii) Which colour component has maximum wavelength

iii) Name the colour which bend the most when the while light passes through glass prism.

**Q.4 Answer the following:(Any One)** **5**

**(1)** Read the passage and answer the following questions.

If the number of atoms of the elements in the reactants in this equation is same as the number of atoms of those elements in the products. Such an equation is called a balanced equation. If the number of atoms of each element is not the same on the two sides of an equation it is called an unbalanced equation. In any reaction, the total mass of each of the elements in the reactant is same as the total mass of each of the respective elements in the products. This is in accordance with the law of conservation of mass.

1. Define balanced equation?
2. Which law is applicable according to balance the equation?

3. What is unbalanced equation?
4. Which property is required for balancing?

**(2)** When molasses, obtained during production of sugar from sugarcane, is subjected to fermentation, compound A is obtained. Compound A on oxidation with alkaline $KMnO_4$ gives compound B. Answer the following :

a) Identify compounds A and B.

b) What product is obtained when compound A and B reacts in presence of acid catalyst?

c) What is the above reaction termed as?

d) Name the fuel obtained by using compound A as an additive to increase the efficiency of petrol.

e) Name the preservative formed by using 5-8% of aqueous solution of compound B.

**....All The Best....**