

Assignment 9th DOI 08 Apr 2016; Date of Submission –Maths 11Apr; Sc 12 Apr;
9 Maths Number System (Q 1-8 : 2 marks each/each part; 9-11: 3 marks each; 12-14: 5 marks each;)

- Are there two irrational numbers whose sum and product both are rationals? Justify.
- State whether the following statements are true:
 (a) There is a number x such that x^2 is irrational but x^4 is rational. Justify your answer by an example. (b) There are infinitely many integers between any two integers. (c) Number of rational numbers between 15 and 18 is finite. (d) The square of an irrational number is always rational.
- Let x and y be rational and irrational numbers, respectively. Is $x + y$ necessarily an irrational number? Give an example in support of your answer.
- Let x be rational and y be irrational. Is xy necessarily irrational? Justify your answer by an example.
- Represent the following numbers on the number line : 7, 7.2
- Classify the following numbers as rational or irrational with justification :
 (i) 0.5918 (ii) 10.124124... (iii) 1.010010001...
 (iv) $\sqrt{196}$ (v) $3\sqrt{18}$ (vi) $\frac{\sqrt{28}}{\sqrt{343}}$
- Insert a rational number and an irrational number between the following :
 (i) 2 and 3 (ii) 0 and 0.1 (iii) 0.15 and 0.16 (iv) 2.357 and 3.121 (vi) .0001 and .001 (vii) 3.623623 and 0.484848 (viii) 6.375289 and 6.375738

8. Locate $\sqrt{13}$ on the number line. 9. Simplify : $(3\sqrt{5} - 5\sqrt{2})(4\sqrt{5} + 3\sqrt{2})$.

10. Find the value of a in the following $\frac{6}{3\sqrt{2} - 2\sqrt{3}} = 3\sqrt{2} - a\sqrt{3}$	11. Simplify : $\left[5\left(8^{\frac{1}{3}} + 27^{\frac{1}{3}}\right)^3\right]^{\frac{1}{4}}$
12. Simplify the following: (i) $\sqrt{45} - 3\sqrt{20} + 4\sqrt{5}$ (ii) $\frac{3}{\sqrt{8}} + \frac{1}{\sqrt{2}}$ (iii) $\sqrt[4]{12} \times \sqrt[3]{6}$ (iv) $3\sqrt{3} + 2\sqrt{27} + \frac{7}{\sqrt{3}}$ (v) $\frac{2\sqrt{3}}{3} - \frac{\sqrt{3}}{6}$	
13 Simplify : $(256)^{-\left(4\frac{-3}{2}\right)}$	
14 Find the value of $\frac{4}{(216)^{-\frac{2}{3}}} + \frac{1}{(256)^{-\frac{3}{4}}} + \frac{2}{(243)^{-\frac{1}{5}}}$	

9 Sc Matter in our surroundings (Q 1-18 : 1 mark each/each part; 19-25 : 3 marks each;)

- Define matter.
- What are the characteristics of matter?
- How matter is classified in terms of physical state?
- How matter is classified in terms of composition?
- Define Density.
- What do you mean by the term Volume?
- State True or False**
 (a). Evaporation of water is a bulk phenomenon. (b). Diffusion takes place in haphazard and random way. (c). SI unit of pressure is atmospheric and $1 \text{ atm} = 1.01 \times 10^5 \text{ Pa}$ (d). A gas is highly incompressible fluid. e. Solids and liquids can be identified from their characteristic melting and boiling points.
- Fill in the blanks**
 8. (a). The process of _____ causes cooling. (b). The process of cooling glass is known as _____. (c). Liquids have no fixed _____ but have fixed _____. (d). _____ exists in all three states of matter. (e). Carbon dioxide is a white solid called _____ at temperature below _____.
 9. (a) Evaporation of a liquid at room temperature leads to a _____ effect.
 (b) At room temperature the forces of attraction between the particles of solid substances are _____ than those which exist in the gaseous state.
 (c) The arrangement of particles is less ordered in the _____ state. However, there is no order in the _____ state.
 (d) _____ is the change of gaseous state directly to solid state without going through the _____ state.
- Match the physical quantities given in column A to their S I units given in column B :

(A)	(B)
(a) Pressure	(i) cubic metre
(b) Temperature	(ii) kilogram
(c) Density	(iii) pascal
(d) Mass	(iv) Kelvin
(e) Volume	(v) kilogram per cubic metre
- The non S I and S I units of some physical quantities are given in column A and column B respectively. Match the units belonging to the same physical quantity

(A)	(B)
(a) degree celsius	(i) kilogram
(b) centimetre	(ii) pascal
(c) gram per centimetre cube	(iii) metre
(d) bar	(iv) Kelvin
(e) milligram	(v) kilogram per metre cube
- 'Osmosis is a special kind of diffusion'. Comment.
- Which state of matter is most easily compressible?

14. Classify the following into osmosis/diffusion (a) Swelling up of a raisin on keeping in water. (b) Spreading of virus on sneezing. (c) Earthworm dying on coming in contact with common salt. (d) Shrinking of grapes kept in thick sugar syrup. (e) Preserving pickles in salt. (f) Spreading of smell of cake being baked through out the house. (g) Aquatic animals using oxygen dissolved in water during respiration.	
15. Why do gases diffuse rapidly? 16. What do you mean by change in state? 17. Why does diffusion become faster at higher temperatures? 18. Is smell of garlic or perfume a matter?	
19. Rama was making tea in a kettle. Suddenly she felt intense heat from the puff of steam gushing out of the spout of the kettle. She wondered whether the temperature of the steam was higher than that of the water boiling in the kettle. Comment.	
20. A sample of water under study was found to boil at 102°C at normal temperature and pressure. Is the water pure? Will this water freeze at 0°C? Comment.	
21. (a) Conversion of solid to vapour is called sublimation. Name the term used to denote the conversion of vapour to solid. (b) Conversion of solid state to liquid state is called fusion; What is meant by latent heat of fusion?	
22. What is SI unit of temperature? Give mathematical relation with other units (scales). 23. Convert the following temperature to Celsius scale: (a) 300 K (b) 573 K	
24. After rains when do rain drops dry away easily – on a cloudy day or on a sunny day? State reason also.	
25. What is the physical state of water at the following temperatures? (a) 25 °C (b) 0 °C (c) 100 °C	

1. Symposium Spoken English and Personality Development Programme (Activity level 1)

Speaker1 Roll No. 1, 6, 11, 16, 21, 26, 31, 36	Speaker2 Roll No. 2, 7, 12, 17, 22, 27, 32, 37
Speaker3 Roll No. 3, 8, 13, 18, 23, 28, 33, 38	Speaker4 Roll No. 4, 9, 14, 19, 24, 29, 34, 39
Speaker5 Roll No. 5, 10, 15, 20, 25, 30, 35, 40	and so on

Symposium 9 SS French Revolution

Speaker1- Good morning friends. We welcome you all for our presentation on the topic The topic will be covered byand

Causes For The French Revolution Political causes (or) Louis XVI and his problems-

(i) Louis XVI came to power in 1774 at the age of 20. He did not have enough experience to handle political matters. (ii.) Long years of war had drained the financial resources of France. So the French treasury was empty. (iii). Louis XVI helped the thirteen American colonies to gain their independence from the common enemy, Britain. (iv). France had taken 3 billion Livres loan from moneylenders who began to charge 10% interest. (v). To meet its regular expenses, such as the cost of maintaining an army, the court, running government offices or universities, the ruler was forced to increase taxes. Nowwill discuss about Social causes(or) Division in the French Society

Speaker 2. Thank you.....(i) French society in the eighteenth century was divided into three estates- Clergy, Nobility and Common People (I, II and III Estates). (ii) Clergy and Nobility were 10% of the population but possessed 60% of lands. III Estate was 90% of the population but possessed 40% of the lands. (iii) Clergy and Nobility enjoyed many privileges based on birth. They were exempted from paying taxes. (iv) The church collected taxes from people. Nobles collected feudal dues from III Estate people. (v) Peasants were obliged to render services to the Clergy and Nobility to work in their houses, fields, serve in the army or to participate in building roads. Nowwill discuss about Economic causes (or) The Struggle to Survive.

Speaker 3. Thank you(i) The population of France rose from 23 million to 28 million in 1789. This led to a rapid increase in the demand for food grains. (ii) Production of grains was less because drought or hail reduced the harvest. (iii) Most workers were employed as labourers in workshops. Owners of the workshops did not increase the wages of workers. This led to a subsistence crisis (scarcity of food grains) which occurred frequently in France. Nowwill discuss about the Growth of Middle Class in France and influence from USA.

Speaker 4. Thank You..... The eighteenth century witnessed the emergence of social groups, termed the middle class, who earned their wealth through trade and professions. This class was influenced by declaration of independence of the USA. They were also influenced by fundamental rights given to the citizens of the USA. All of these people were educated and believed that no group in society should be privileged by birth. They also believed that French society should be based on freedom, equality and equal opportunities for all. Nowwill discuss about the Role of Philosophers in the French Revolution.

Speaker 5. Thank you..... (i) John Locke, in his book the Two Treatises of Government, criticized the doctrine of the divine and absolute right of the monarch. (ii) Jean Jacques Rousseau, in his book Social Contract proposed a form of government based on a social contract between people and their representatives. (iii) Montesquieu in his book The Spirit of the Laws, proposed a division of power within the government between the legislative, the executive and the judiciary.

The ideas of these philosophers were discussed intensively in salons and coffee-houses and spread among people through books and newspapers. The news that Louis XVI planned to impose further taxes generated anger and protest against the ruler and system. With this we come to an end of our symposium. We will discuss about our break of the French revolution in our next presentation. Thank you.

2. Quiz- <http://www.learnmyway.in> 9(04) DOI Apr 2016.Q.Sc. Matter in our surroundings;

3. Electronic test - <http://www.learnmyway.in> 9(04) DOI Feb 15 2016.ET.Sc. Matter in our surroundings;

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