



MBER				

Genius Seed Program (ACADEMIC SESSION 2025-2026)

Pre Foundation Division

CLASS – VII & VIII

MOCK TEST # 01

TARGET : ICQ

PL	EASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY
1.	Duration of Test is 1 Hour and Questions Paper Contains
	30 Questions.
2.	Total Marks are 30.
3.	Student must abide by the instructions issued during the
	examination, by the invigilators or the centre incharge.
4.	Before attempting the question paper ensure that it contains
	all the pages and that no question is missing.
5.	A candidate has to write his / her answers in the OMR
	sheet by darkening the appropriate bubble with the help of
	Blue / Black Ball Point Pen only as the correct answer(s)
	of the question attempted.
6.	Use of Pencil is strictly prohibited.

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Science Olympiads Mathematics Olympiads NSO, IOS, NSTSC, VVM, ICQ UIMO, IMO, IOM, IPM, NMTC



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Q1. Ferrous sulphate is a common compound. It occurs as green crystals that dissolve easily in water. Ferrous sulphate contains four atoms of oxygen to one atom each of iron and sulphur. Its formula should therefore be written :-

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(A) FeSO<sub>4</sub>
                       (B) FSeO<sub>4</sub>
                                                   (C) FeS<sub>4</sub>O
                                                                                    (D) Fe_2S_2O_8
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- Q2. A student had a mixture of sand and salt, and wanted to separate out the sand. The student placed the mixture in a beaker and added water, then stirred vigorously. The mixture was then passed through filter paper and the salty water was collected in another beaker. The sand is collected on the filter paper and the salt remained in the aqueous solution. So which techniques were used for separation of mixture?
 - (A) Sedimentation and Decantation (B) Filtration and Distillation
 - (C) Filtration and crystallization (D) Sedimentation and filtration
- **Q3.** A compound is formed when two more elements combine to form a single substance. In which of the following groups all the formulae do not represent compounds?

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(A) KNO<sub>3</sub>, H_2O, NaCl, Fe<sub>2</sub>O<sub>3</sub>
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(C) CuO, Mg, NaCl, Al

(B) CaCO₃, NO₂, HCl, H₂O (D) HCl, NO, CO₂, ZnO

- **Q4**. In chemistry, changes may be physical or chemical. A physical change occurs when :-
 - (A) Carbon burns in oxygen to forms carbon dioxide gas.
 - (B) Water boils to form steam.
 - (C) Burning of paper or burning log of wood.
 - (D) Digestion of food.
- Gopi poured equal water into the 4 containers as shown below. Which of the Q5. following can be the results of this experiment?



(i) Fluidity

(ii) no definite volume

(iii) no definite shape

(iv) a definite volume

(B) ii and iv (A) i and ii

(C) i, iii and iv (D) i and iv

Q6. Magnesium sulfate is a common compound. It occurs as white crystals that dissolve easily in water. Magnesium sulfate contains four atoms of oxygen to one atom each of magnesium and sulfur. Its formula should therefore be written (A) MgSO (B) MgS_4O (C) MgSO₄ (D) MgSO $\times 4$



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Q7. The colour of many materials are caused by substances called pigments. Pigments may be natural or artificial substances. They are solids with distinct colours, usually insoluble in water, and difficult to separate from the materials that they colour. Blood is a natural pigment which gives humans their red blood colour.Cobalt blue is an artificial pigment used in some blue paints and in blue glass. In which of the following is the green colour is due to a pigment?

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(A) grass
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- (B) green vegetable
- (C) green in a rainbow
- (D) chlorophyll in plant
- **Q8.** If solutions of hydrogen chloride (HCl) and sodium hydrogen carbonate, (NaHCO₃) are mixed a gas is released. During this bubbles of carbon dioxide gas are given off and the mixture becomes cloudy white when it passed though lime water. Which of the following is the best example of a chemical change?

(A) Bubbles of gas form. (B) White color is formed .

- (C) The mixture becomes warmer. (D) No physical change is described.
- **Q9.** To obtain pure sand from 30g of a mixture of salt and sand, a student stirred the mixture with 100mL of water in a beaker. The mixture was then transferred to a filter, so that the salty water could drain away from the sand. The drained sand was removed from the filter and weighed. Its mass was 32g. What mistake did the student make in carrying out the procedure?
 - (A) The mixture of salt, sand and water should have been allowed to settle, then been decanted (some liquid poured off), before being transferred to the filter.
 - (B) The mixture of salt, sand and water should have been warmed while being stirred.
 - (C) The drained sand from the filter should have been warmed until it was dry before being weighed.
 - (D) The mixing of the salt and sand with water should have been done by shaking the mixture in a stoppered flask.
- **Q10.** Sudhir has taken sulphur and sodium and started to burn both of them in a separate closed container. He then took moist blue litmus paper to beaker where sulphur is allowed to burn and noted the change in litmus. He then took moist blue litmus paper and put some ashes of sodium oxide on it and noted change in litmus. The correct observation is :-
 - (A) Beaker containing product of burnt sulphur has changed the moist litmus to red
 - (B) Beaker containing ashes of burnt sodium has changed the moist litmus to red
 - (C) Beaker containing product of burnt sulphur has not changes the colour of litmus
 - (D) Both (A) and (B)



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- **Q11.** In a laboratory, students were performing neutralization experiment, and they observed that the test tube in which they were doing experiment became warm. What could be the possible reason for this change?
 - (A) Heat is absorbed during neutralization reaction because of which test tube became warm.
 - (B) Heat is released during neutralization reaction because of which test tube became warm.
 - (C) As the temperature of the lab was high, test tube became warm.
 - (D) This observation is wrong that test tube those not becomes warm during neutralization reaction.
- **Q12.** Match column I with column II and select the correct option from the codes given below.

Column I	Column II
(a) Vinegar	(i) Neutral
(b) Milk of magnesia	(ii) Acidic
(c) Sugar solution	(iii) Indicator
(d) China rose petals	(iv) Basic
(A) (a) - (ii), (b) - (i), (c) - (iv), d -	- (iii)
(B) (a) – (ii), (b) – (iv), (c) – (i), d –	- (iii)
(C) (a) – (ii), (b) – (i), (c) – (iii), d –	- (iv)
(D) (a) $-$ (i), (b) $-$ (ii), (c) $-$ (iii), d $-$	- (iv)

Q13. Rakesh burned two different fibres X and Y in order to identify them. X smelt like burning paper while Y smelt like burning hair. Which of the following options correctly identifies the two fibres?

(A) $X = Wool, Y = Silk$	(B) $X = Cotton, Y = Rayon$
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- (C) X = Cotton, Y = Silk (D) X = Silk, Y = Wool
- Q14. How many of the following animals are wool yielding animals?

1. Yak	2. Dog	3. Llama	4. Alpaca
5. Donkey	6. Camel	7. Goat	8. Angora goat
9. Sheep	10. Lion		
(A) 5	(B) 6	(C) 7	(D) 8



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Different metallic salt solutions are different in colour. For example sulphate of Cu is blue in colour but that of Iron is green in colour. A high reactive metal can easily displace the less reactive metal from its salt solution and can cause a change in colour.

Take appropriate quantity of $FeSO_4$, from your school laboratory and dissolve it in small quantity of water to obtain green coloured aqueous solution. Now put 3-5 pieces of medium size zinc pieces in it. After sometime colour of the solution starts changing .

(D) Double decomposition

- **Q15.** Which type of reaction is responsible for this change?
 - (A) Displacement (B) Combination
 - (C) Decomposition
- Q16. Correct chemical equation for process
 - $(A) 2Fe + CuSO_4 \rightarrow Fe + Cu \qquad (B) Zn + FeSO_4 \rightarrow ZnSO_4 + Fe$
 - (C) $ZnSO_4 + Cu \rightarrow CuSO_4 + Zn$ (D) None of these
- **Q17.** Above phenomena represents what colour change?
 - (A) Green to pink (B) Green to colourless
 - (C) Colourless to green (D) None of these
- **Q18.** Study the given Venn diagram carefully and identify points 1, 2 and 3.



	А	В	С		
(A)	Burning of a kerosene wick stove	Tarnishing of silver jewellery	Bursting of balloon		
(B)	Setting of milk to form curd	Extraction of metals by electrolysis	Slaking of lime		
(C)	Burning of LPG in kitchen	Rusting of iron	Evaporation of water		
(D)	Burning of a candle	Breaking of glass	Depletion of ozone layer		



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Q19. Read the given passage and fill in the blanks by choosing an appropriate option.

Metals have high densities except ____(i)____which can even float on water. Metals are malleable and ductile. ____(ii)____ are the most malleable and ductile metals.

All metals conduct heat and electricity. (iii)_____is the best conductor while (iv) is a poor conductor.

	(i)	(ii)	(iii)	(iv)
(A)	K and Ca	Fe and Cu	Al	Ag
(B)	Cu and Pb	Cu and Al	Cu	Au
(C)	Na and K	Au and Ag	Ag	Hg
(D)	Na and Mg	Zn and Cu	Zn	Na

Q20. A brief information about a few substances is given as :

X : It is the residue left behind after destructive distillation of coal.

Y : It is a mixture of hydrogen, methane, carbon monoxide and other gases.

Z : It contains several carbon compounds which are used to make pesticides, explosives, synthetic fibres, perfumes, etc.

X, Y and Z are respectively

- (A) Kerosene, CNG and ammoniacal liquor
- (B) Bitumen, coal gas and coal tar
- (C) Coke, coal gas and coal tar

(D) Petrol, CNG and bitumen

Q21. If yellow – brown iodine solution is added to a solution of starch, a dark blue colour appears. If a drop of Benedict's Solution, which is blue, is warmed with a drop of a solution containing glucose, the colour of the mixture changes from blue to orange-brown. When iodine solution was added to a sample of a liquid, the colour remained yellow-brown. When a sample of the same liquid was warmed with a drop of Benedict's solution, the colour stayed blue.

What can be said about the liquid being sampled?

- (A) The liquid contains both glucose and starch.
- (B) The liquid contains neither starch nor glucose.
- (C) The liquid contains glucose but no starch.
- (D) The liquid contains starch but no glucose.



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- **Q22.** Distilled water when used as a conductor in an experiment of electrical conductivity, fails to complete the circuit and the experiment does not proceeds on. The possible reason for the above observation is:
 - (A) The experiment was not performed at right temperature.
 - (B) The distilled water may not be at right temperature.
 - (C) Distilled water has the capacity to hold the current, so no conduction.
 - (D) Distilled water is free of solutes, so no conduction.
- **Q23.** If dilute sulphuric acid is added to marble, a reaction occurs and carbon dioxide gas, CO_2 , is given off. A student wanting to measure how much carbon dioxide was given off from a certain mass of marble when the acid is added made the following measurements:

Mass of empty flask =43.0 g

Mass of flask with marble = 45.5 g

Mass of sulphuric acid added to the flask with marble = 16.0 g

Mass of flask with marble and acid after reaction is finished = 60.4 g

Which of the following statements is correct?

(A) 17.0 g of CO_2 was given off when 55.5 g of marble reacted with the acid.

(B) 1.1 g of CO_2 was given off when 2.5 g of marble reacted with the acid.

(C) 70.4 g of CO_2 was given off when 23.0 g of marble reacted with the acid.

(D) 5.5 g of CO_2 was given off when 26.0 g of acid reacted with the marble

Q24. Look at the Venn diagram below. What of the following can be placed in place of X ?





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- **Q25.** Some oxides of sulphur are significant air pollutants. Scientists who study air pollution often refer to nitrogen oxides collectively as SO_x.
 - (A) 'x' means that scientists don't know much oxygen is in these compounds.
 - (B) 'x' refers to different amounts of oxygen that can combine with sulphur when sulphur oxides are formed.
 - (C) 'x' refers to the different amounts of these gases in the air, which vary with the amount of air pollution.
 - (D) 'SO,' is a way of stating that these gases are noxious forms of air pollution.
- Q26. Four separate solutions of potassium dichromate , $K_2Cr_2O_7$, were prepared. The intensity of the orange colour formed is an indication of the concentration of $K_2Cr_2O_7$ in the solution, the most concentrated being the most orange. The four solutions were made up as follows :

Solution	Mass of $K_2Cr_2O_7$ (g)	Volume of water (ml)
1	0.50	25
2	1.50	50
3	2.40	200
4	3.80	250

What is the order of colour intensity of the solution from least to most orange ?

(A) 1,2,3,4 (B) 3,1,4,2 (C) 2,4,1,3 (D) 3,4,1,2

Q27. A catalyst is a substance that can be used to speed up a reaction. A catalyst is not consumed in the reaction.

An example of a catalysed reaction is the formation of nitrogen oxide and water from ammonia, NH₃, and oxygen, O₂, gases using powdered platinum catalyst. Which sequence of diagrams represents the best catalysed reaction between ammonia and oxygen?





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Q28. A chemical equation shows the exact ratio of materials that react. Usually in a chemical reaction, however, one reactant is used up before the other one. The one that is used up first is called the limiting reagent because it determines how much product can be made.

The diagram shows a reaction between two substances X_2 and XY_2 producing X_3Y and Y_2 . What is the limiting regent in this reaction?



(A) X_2 (B) X_3Y (C) XY_2 (D) Y_2

Q29. Most rocks are made of crystals of compounds containing the element silicon. Limestone (calcium carbonate) is a common exception, as is bauxite, a rock containing mainly aluminium oxide, which is mined and processed into aluminium. Which one of the following could represent the chemical formula for the main substance present in bauxite?

(A) SiO_2 (B) Al_2O_3 (C) $CaCO_3$ (4) Al_3SiO_4

Q30. Yeast is a living micro-organism. When yeast is mixed with bread dough, yeast cells use up sugar from the dough mixture and make carbon dioxide gas. Before it is cooked, the dough is left to stand, which gives it time to expand. Cooking kills the yeast, but makes the dough expand so much that the bread becomes full of little holes.

How does making of bread and bakery products use yeast?

- (A) As the yeast cells die from being cooked they puff up into bubbles.
- (B) Little holes are left where the sugar was before the yeast used it up.
- (C) The carbon dioxide gas expands into bubbles throughout the products when it is heated.
- (D) Heat makes yeast cells use sugar faster, so carbon dioxide is made faster during cooking.

CLAS	ASS24 TEST : 1 (7TH & 8TH)														
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Chemistry															
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