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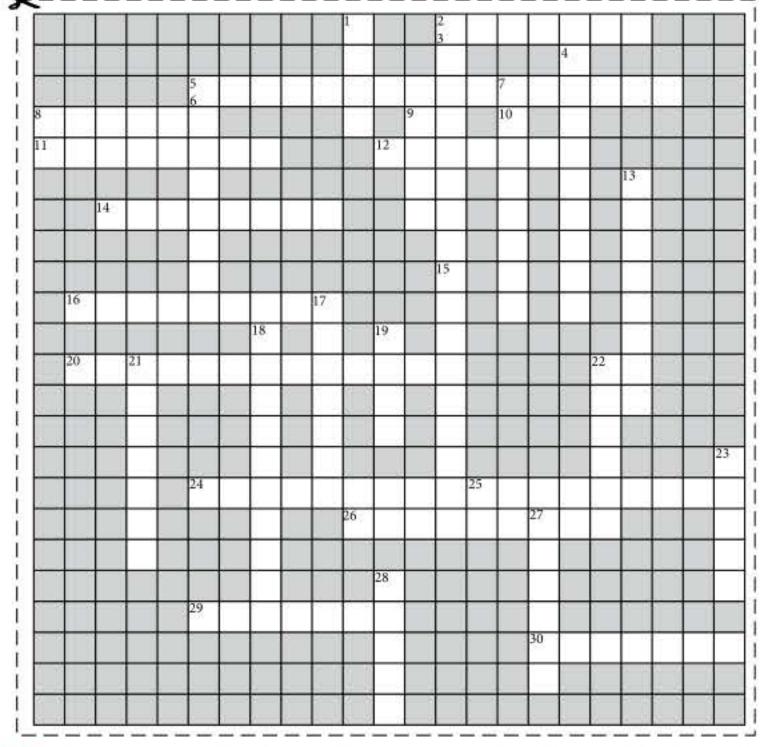
Winners' name with their valuable feedback will be published in next issue.

ACROSS

- 3. A mildly toxic, white crystalline organic compound belonging to the indole family. It occurs naturally in faeces and coal tar and has a strong faecal odour. (7)
- An aminopyridine that functions as a centrally acting nonopioid analgesic that was originally used as an analgesic for acute and chronic pain. (10)
- 7. A gelatinous precipitate formed by coagulation of a sol. (6)
- A German scientist who prepared almost perfectly semipermeable membrane using gelatinous copper ferrocyanide, Cu₂[Fe(CN)₆]. (6)
- 11. Naturally occurring alloy of gold and silver (upto 45% Ag). It resembles pure gold in appearance. (8)
- 12. An atomic unit of energy which is equal to e^2/a_0 (where e is the charge of an electron and a_0 is the atomic unit of length). (7)
- 14. An arsenic derivative that causes blisters and used in chemical warfare. (8)
- 16. An instrument used to determine fermentation efficiency of yeast by measuring the amount of carbon dioxide produced from a given quantity of sugar. (9)
- 20. The action of heating a substance until it burns away rapidly. (12)
- 24. ____ law which expresses the dependence of a reaction enthalpy on temperature. (9)
- 25. A stable heterocyclic octacirculene based on thiophene. (9)
- **26.** A polycyclic alkane with a structure similar to basket. (9)
- 29. Fraction which is defined as the mass defect divided by the mass number. (7)
- **30.** A mineral deposit of gravel, sand and nitrates, found in dry areas of America. (7)

DOWN

- Small, granular, opaque diamonds, used as an abrasive in cutting tools. (4)
- 2. The contraction of a gel accompanied by the separating out of liquid. (9)
- 4. A technique in which a stable atom in a compound is replaced by its radioactive isotope. (9)
- 5. _____ include all quarks and leptons, as well as any composite particle made of an odd number of these, such as all baryons and many atoms and nuclei. (8)
- 9. A metal oxide obtained by heating an ore to high temperature in air. (4)



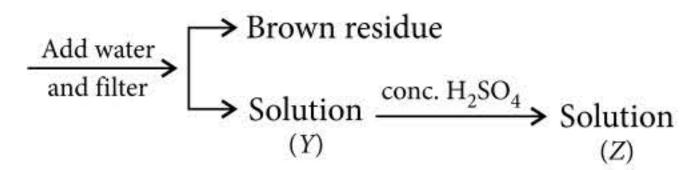
- 10. A reactor which produces more fissile nuclei than it consumes. (7)
- 13. A thermodynamic property of a real gas which is effective partial pressure. (8)
- 15. Polymethine fibre with elastic properties. (7)
- 17. Equation which gives relation between effect of temperature on surface tension. (6)
- 18. A mixture of two or more components that reaches an equilibrium temperature which is independent of the temperature of any of its components before they are mixed. (10)
- 19. The rule which is a practical aid for determining the configuration of chiral centers of amino acids. (4)
- 21. An organothiophosphate insecticide primarily used on corn. (7)
- 22. An analogue of pyrrole in which an arsenic atom replaces the nitrogen atom. (6)
- 23. The tendency of a solid material to move slowly or deform permanently under the influence of mechanical stress. (5)
- A general name for alloys containing Al, Ni, Co and Fe, used as permanent magnets. (6)
- 28. A very hard natural form of silica, used for knife-edges of balances and in ornaments. (5) ◆◆

- (a) E_{ox} will increase by a factor of 0.65 from E_{ox}° .
- (b) E_{ox} will decrease by a factor of 0.65 from E_{ox}^{o} .
- (c) E_{red} will increase by a factor of 0.65 from E_{red}° .
- (d) E_{red} will decrease by a factor of 0.65 from E_{red}° .
- Ammonia is always added in this reaction. Which of the following must be correct?
 - (i) NH₃ combines with Ag⁺ to form a complex.
 - (ii) $[Ag(NH_3)_2^+]$ is a stronger oxidising agent than Ag^+ .
 - (iii) In absence of NH₃ silver salt of gluconic acid is formed.
 - (iv) NH₃ has affected the standard reduction potential of glucose/gluconic acid electrode.
 - (a) (i) and (iv) only
 - (b) (ii) and (iii) only
 - (c) (i), (ii) and (iii) only
 - (d) All of these

INTEGER VALUE

Following steps are involved in manufacturing of potassium dichromate:

Chromite ore
$$\frac{\text{Fused with Na}_2\text{CO}_3}{\text{in the presence of air}}$$
 Solid mass



Calculate the difference in the oxidation number of Cr in X and Z.

10. How many of the following compounds have the same osmotic pressure as that of 1 M Na₂SO₄ solution at constant temperature? 1 M KCl, 1.5 M K₂SO₄, 1.5 M NaCl, 2 M Al₂(SO₄)₃, 0.5 M BaSO₄



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