

Science

- 1) Oxidation is a process which involves
 - a) Addition of oxygen
 - b) Addition of hydrogen
 - c) Removal of oxygen
 - d) Removal of hydrogen

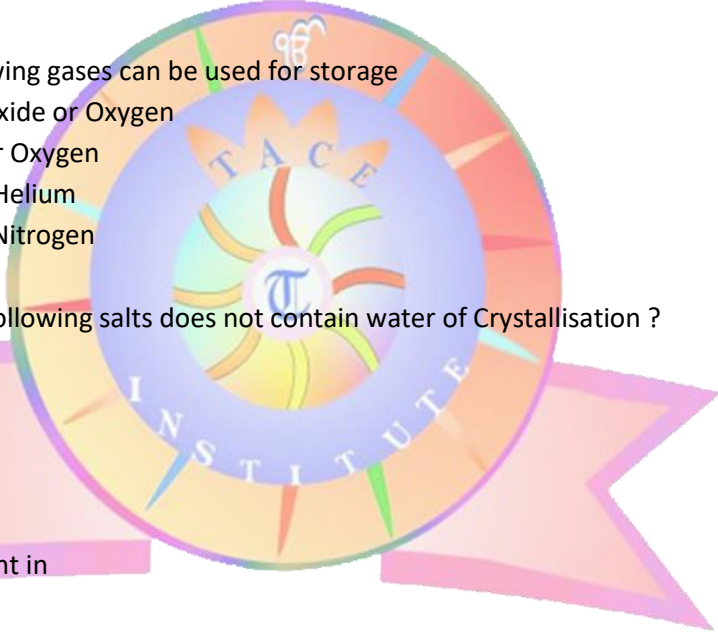
 - 2) Which of the following is a displacement reaction ?
 - a) $\text{MgCO}_3 \longrightarrow \text{MgO} + \text{CO}_2$
 - b) $2\text{Na} + 2\text{H}_2\text{O} \longrightarrow 2\text{NaOH} + \text{H}_2$
 - c) $2\text{H}_2 + \text{O}_2 \longrightarrow 2\text{H}_2\text{O}$
 - d) $2\text{Pb}(\text{NO}_3)_2 \xrightarrow{\text{Heat}} 2\text{PbO} + 4\text{NO}_2 + \text{O}_2$

 - 3) Which of the following gases can be used for storage
 - a) Carbon dioxide or Oxygen
 - b) Nitrogen or Oxygen
 - c) Carbon or Helium
 - d) Helium or Nitrogen

 - 4) Which one of the following salts does not contain water of Crystallisation ?
 - a) Blue vitriol
 - b) Baking soda
 - c) Washing soda
 - d) Gypsum

 - 5) Lactic Acid is present in
 - a) Orange
 - b) Tea
 - c) Curd
 - d) Vinegar

 - 6) In which pH range does our body work to survive in the atmosphere ?
 - a) 5.5 to 8.5
 - b) 7.0 to 7.8
 - c) 2.3 to 7.0
 - d) 7.5 to 12.5

 - 7) What happens when a solution of an acid is mixed with a solution of a base in test tube ?
 - a) The temperature of the solution increases
 - b) The temperature of the solution decreases
 - c) The temperature of the solution remains the same
 - d) Salt formation takes place
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- The logo for TACE Institute is a circular emblem with a multi-colored sunburst design in the center. The letters 'TACE' are written in a semi-circle above the sunburst, and 'INSTITUTE' is written in a semi-circle below it. The entire emblem is set against a background of a pink ribbon-like shape.

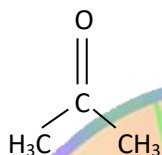
8) Find incomplete chemical reactions in his book as shown below:



Which option completes the reaction ?

- a) $\text{MgO} + \text{HNO}_3 \longrightarrow \text{Mg}_3\text{N}_2 + 4\text{H}_2\text{O}$
- b) $\text{MgO} + \text{HNO}_3 \longrightarrow \text{Mg} + \text{NO}_2 + \text{O}_2$
- c) $\text{MgO} + \text{HNO}_3 \longrightarrow \text{Mg} + (\text{OH})_2 + 2\text{NO}_2$
- d) $\text{MgO} + \text{HNO}_3 \longrightarrow \text{Mg}(\text{NO}_3)_2 + \text{H}_2\text{O}$

9) The following image represents a carbon compound



Which functional group is present in the compound ?

- a) Alcohol
 - b) Aldehyde
 - c) Carboxylic acid
 - d) Ketone
- 10) Which parts of the brain control blood pressure ?
- a) Spinal cord, Skull, Hypothalamus
 - b) Cord, Skull Cerebellum
 - c) Pons, Medulla, Cerebellum
 - d) Pons, Medulla, Pituitary

11) Which of the following can make a parallel beam on light from a point source incident on it ?

- a) Concave mirror as well as convex lens
- b) Convex mirror as well as concave lens
- c) Two plane mirrors placed at 90 degree to each other
- d) Concave mirror as well as concave lens

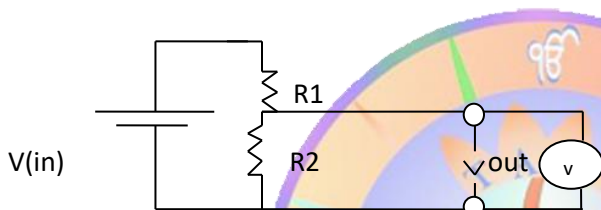
12) A person sees an object closer to his eyes. What changes will take place in his eyes ?

- a) The pupil size will expand
- b) The ciliary muscles will contract
- c) The focal length of the eye lens will increase
- d) The light entering the eye will be more

- 13) Which option justifies that the sun appears red at sunrise and sunset ?
- a) Red scatters highest by the atmosphere
 - b) The distance between the sun and earth reduces
 - c) Red has a high wavelength, so it travels a longer distance
 - d) The white light disperses into seven colours only red enters the atmosphere

- 14) Which of the following represents voltage ?
- a) Work done / Current x Time
 - b) Work done x Charge
 - c) Work done x Time / Current
 - d) Work done x Charge x Time

- 15) The image shows a circuit diagram



What is being measured using the voltmeter ?

- a) Current in the circuit
 - b) Voltage in the circuit
 - c) The voltage across the resistor
 - d) The resistance offered by the resistor
- 16) Which of the following is not attracted by magnet ?
- a) Steel
 - b) Cobalt
 - c) Brass
 - d) Nickel
- 17) Two magnetic field lines
- a) Intersect at the neutral point
 - b) Never intersect each other
 - c) Intersect near north pole or south pole
 - d) Intersect at the midpoint of the magnet
- 18) Thermal power point is considered a bad source of energy why ?
- a) as it uses very less amount of fossil-fuels
 - b) as the burning of fossil fuel releases harmful gases
 - c) as electricity is harmful and pollutes the environment
 - d) as thermal power points produce less amount of electricity

19) Which of the following is responsible for depletion of the ozone layer

- a) CFC_s
- b) Oxygen
- c) SO₂
- d) CO₂

20) A student conducts an activity using a concave mirror with a focal length of 10cm. He placed the object 15cm from the mirror. Where is the image likely to form ?

- a) At 6cm behind the mirror
- b) At 30cm behind the mirror
- c) At 6cm in front of the mirror
- d) At 30cm in front of the mirror

