- Which of the following is not correct?
   (a) Hydrolysis of NCl<sub>3</sub> gives NH<sub>3</sub> and HOCl
  - (b) NH<sub>3</sub> is less stable than PH<sub>3</sub>
    (c) NH<sub>3</sub> is a weak reducing reagent compared
  - to PH<sub>3</sub>
    (d) Nitric oxide in solid state exhibits
  - (d) Nitric oxide in solid state exhibits diamagnetic property
- 2. SiO<sub>2</sub> is reacted with sodium carbonate. What is the gas liberated?(a) CO(b) O<sub>2</sub>
  - (a) CO (b)  $O_2$  (c)  $CO_2$  (d)  $O_3$
- 3. The compounds formed at anode in the electrolysis of an aqueous solution of potassium acetate, are
- (a) C<sub>2</sub>H<sub>6</sub> and CO<sub>2</sub> (b) C<sub>2</sub>H<sub>4</sub> and CO<sub>2</sub>
   (c) CH<sub>4</sub> and H<sub>2</sub> (d) CH<sub>4</sub> and CO<sub>2</sub>
   4. Which of the following is not correct regarding
  - (a) Lead is used as cathode (b) 50% H<sub>2</sub>SO<sub>4</sub> is used
    - (c) Hydrogen is liberated at anode

the elecolytic preparation of H<sub>2</sub>O<sub>2</sub>?

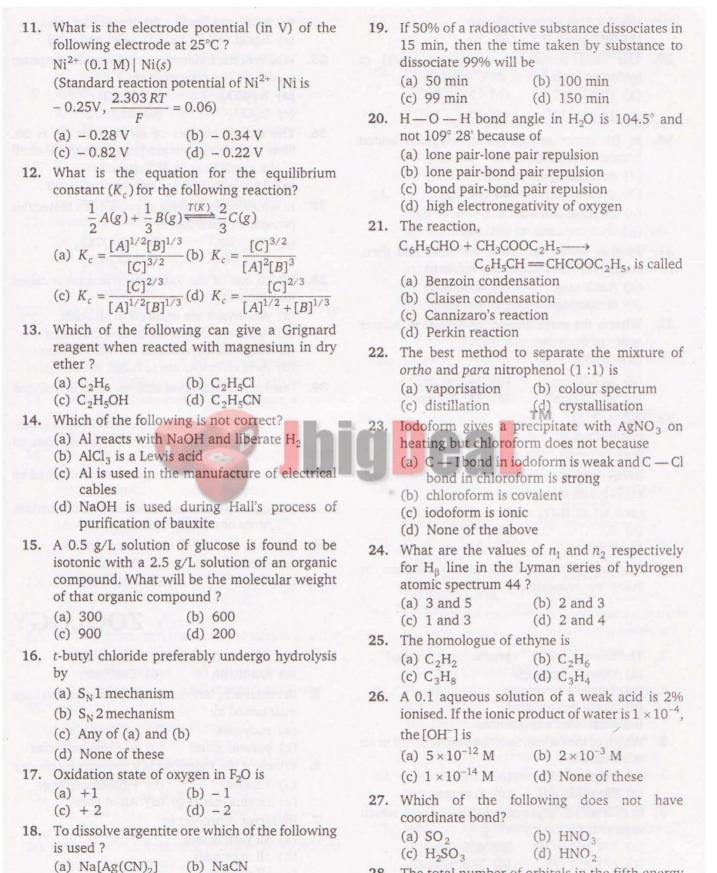
- (d) Sulphuric acid undergoes oxidation
- Which of the following is correct?(a) The pH of one litre solution containing 0.49 g of H<sub>2</sub>SO<sub>4</sub> is 2.0
  - (b) The conjugate base of  $H_2S$  is  $S^{2-}$
  - (c) BF<sub>3</sub> is a Lewis base
  - (d) Phenolphthalein is colourless in basic medium
- 6. Which of the following is correct?(a) Catalyst undergoes permanent chemical change

- (b) Particle size of solute in true solution is  $10^{-3} \text{ m}$
- (c) Starch solution is a hydrosol
- (d) Hydrolysis of liquid ester in the presence of mineral acid is an example of heterogeneous catalysis reactions
- 7. In an oxidation-reduction reaction, MnO<sub>4</sub> ion is converted to Mn<sup>2+</sup>. What is the number of equivalents of KMnO<sub>4</sub> (mol. wt. = 158) present in 250 mL of 0.04 M KMnO<sub>4</sub> solution?
  - (a) 0.02 (b) 0.05 (c) 0.04 (d) 0.07
- 8. Which of the following reagents converts both acetaldehyde and acetone to alkanes?
  - (a) Ni/H<sub>2</sub> (b) LiAlH<sub>4</sub> (c) I<sub>2</sub>/NaOH (d) Zn-Hg/conc. HCl
  - The heat of formation of CO(g) and CO<sub>2</sub>(g) are  $\Delta H = -110$  and  $\Delta H = -393$  kJ mol<sup>-1</sup>

respectively. What is the heat of reaction ( $\Delta H$ ) (in kJ mol<sup>-1</sup>) for the following reaction?

$$CO(g) + \frac{1}{2}O_2(g) \longrightarrow CO_2(g)$$

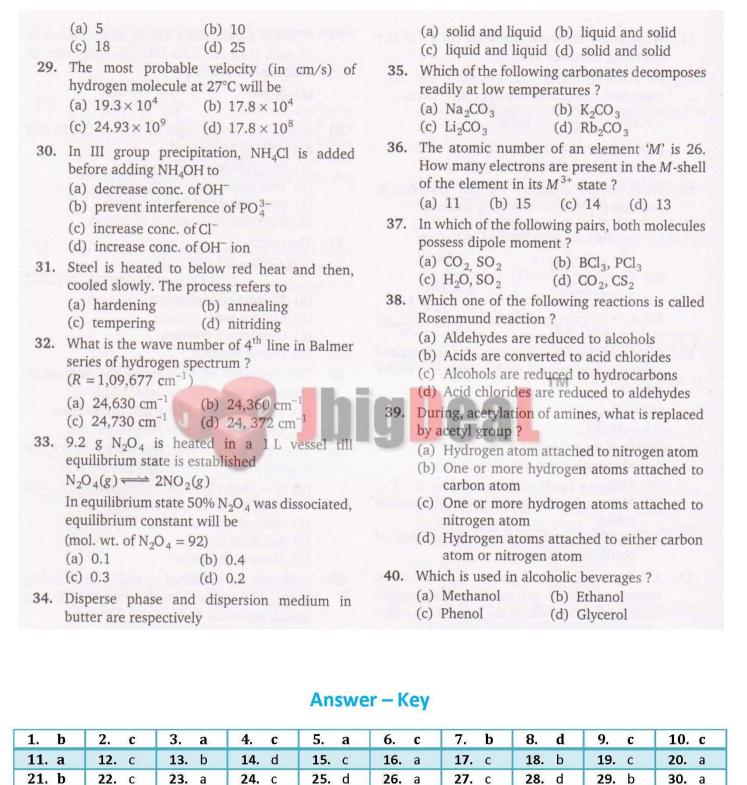
- (a) -504 (b) -142.5 (c) -283 (d) 504
- 10. What is the wavelength (in m) of a particle of mass  $6.62 \times 10^{-29}$  g moving with a velocity of  $10^3$  ms<sup>-1</sup>?
  - (a)  $6.62 \times 10^{-4}$  (b)  $6.62 \times 10^{-3}$
  - (c)  $10^{-5}$  (d)  $10^5$



(c) NaCl

(d) HCl

**28.** The total number of orbitals in the fifth energy level is



31. b

**32.** d

**33.** d

34.

b

**35.** c

**36.** d

**37.** c

**38.** d

**39.** c

**40.** b