

33. One of the stages of obtaining soda ash and sodium bicarbonate according to the Solve method:

- A) obtaining a solution of limestone;
- B) preparation of limestone for roasting;
- C) regeneration of ammonia;
- D) separation of CaCl_2 ;
- E) grinding of raw materials and synthesis of ammonia.

34. The stage of obtaining soda ash according to the Leblanc method:

- A) $2\text{NaCl} + \text{H}_2\text{SO}_4 = \text{Na}_2\text{SO}_4 + 2\text{HCl}$;
- B) ammonia regeneration: $2\text{NH}_4\text{Cl} + \text{CaO} = \text{CaCl}_2 + \text{H}_2\text{O} + 2\text{NH}_3$
- C) calcination with the formation of soda: $2\text{NaHCO}_3 = \text{Na}_2\text{CO}_3 + \text{CO}_2 + \text{H}_2\text{O}$;
- D) separation of CaCl_2 ;
- E) grinding of raw materials and synthesis of ammonia.

35. One of the stages of obtaining soda ash according to the Leblanc method:

- A) separation of CaCl_2 ;
- B) calcination with the formation of soda: $2\text{NaHCO}_3 = \text{Na}_2\text{CO}_3 + \text{CO}_2 + \text{H}_2\text{O}$;
- C) $\text{Na}_2\text{SO}_4 + 3\text{C} + \text{CaO} = \text{Na}_2\text{CO}_3 + \text{CaS} + 2\text{CO}$;
- D) grinding of raw materials and synthesis of ammonia;
- E) synthesis of ammonia.

36. Specify the steps of producing soda ash by the method of LeBlanc:

- A) calcination with the formation of soda: $2\text{NaHCO}_3 = \text{Na}_2\text{CO}_3 + \text{CO}_2 + \text{H}_2\text{O}$, partial regeneration of sulfur from calcium sulfide;
- B) the ammonia regeneration: $2\text{NH}_4\text{Cl} + \text{CaO} + \text{H}_2\text{O} = \text{CaCl}_2 + 2\text{NH}_3$ and separation CaCl_2 ;
- C) leaching, evaporation and crystallization of $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$, calcination with the formation of Na_2CO_3 , partial regeneration of sulfur from calcium sulfide;
- D) regeneration of sulfur from calcium sulfide;
- E) $2\text{NaCl} + \text{H}_2\text{SO}_4 = \text{Na}_2\text{SO}_4 + 2\text{HCl}$, neutralization of HCl with alkali, partial regeneration of sulfur from sodium sulfate.

37. During the calcination of limestone in a mine furnace, the following processes occur:

- A) the complete decomposition of calcium and magnesium carbonates to their oxides;
- B) producing low quality soda;
- C) the deposition of clay and sand;
- D) the separation of calcium carbonate from magnesium carbonate;
- E) production of iron and silicon oxides.

38. If there are clay and sand impurities in the limestone, the following reactions occur during firing between them and the carbonates to form:

- A) aluminum, iron and silicon carbonates;
- B) silicates, aluminates, ferrites of calcium and magnesium;
- C) iron, silicon and aluminum oxides;
- D) iron and silicon silicates;
- E) aluminosilicates.

39. The following kilns are mainly used for calcining limestone:

- A) horizontal;
- B) mine;
- C) vertical;
- D) shelves;