

- B) ammonia oxidation, NO oxidation, gas cooling, NO₂ absorption;
- C) NO oxidation, gas cooling, ammonia oxidation, NO₂ absorption;
- D) NO oxidation, NO₂ absorption, gas cooling, ammonia oxidation;
- E) NO₂ absorption, NO oxidation, ammonia oxidation, gas cooling.

38. The optimal conditions for the process of ammonia oxidation in nitric acid production technology:

- A) T = 800 °C, P = 0.42 MPa, the catalyst is platinum-rhodium;
- B) T = 900 °C, P = 0.1 MPa, the catalyst is iron-nickel;
- C) T = 450 °C, P = 3.5 MPa, the catalyst is iron;
- D) T = 670 °C, P = 0.01 MPa, the catalyst is iron-nickel;
- E) T = 550 °C, P = 1.5 MPa, the catalyst is iron-molybdenum.

39. Industrial methods for the production of ammonia, depending on pressure, are divided into:

- A) under low pressure of 15-25 MPa;
- B) under an average pressure of 20-30 MPa;
- C) under high pressure 125-130 MPa;
- D) under high pressure 75-110 MPa;
- E) under an average pressure of 40-60 MPa.

40. The conditions necessary for the effective operation of the absorption column in the production technology of nitric acid:

- A) increase in temperature and pressure;
- B) a decrease in temperature and pressure;
- C) a decrease in temperature and an increase in pressure;
- D) an increase in temperature and an increase in oxygen concentration;
- E) an increase in oxygen concentration and a decrease in pressure.

41. The neutralization of nitrogen oxides in nitric acid production is carried out in accordance with the reaction:

- A) $\text{NO} + 0.5\text{O}_2 = \text{NO}_2$;
- B) $\text{N}_2\text{O}_3 + \text{H}_2\text{O} = 2\text{HNO}_2$;
- C) $2\text{HNO}_3 + \text{Ca}(\text{OH})_2 = \text{Ca}(\text{NO}_3)_2 + 2\text{H}_2\text{O}$;
- D) $2\text{NO} + \text{CH}_4 = \text{N}_2 + \text{CO}_2 + \text{H}_2\text{O}$;
- E) $3\text{NO}_2 + \text{H}_2\text{O} = 2\text{HNO}_3 + \text{NO}$.

42. The reaction of neutralization of nitrogen oxides in the production of nitric acid:

- A) $\text{N}_2\text{O}_3 + \text{H}_2\text{O} = 2\text{HNO}_2$;
- B) $2\text{NO}_2 + 4\text{H}_2 = \text{N}_2 + 4\text{H}_2\text{O}$;
- C) $2\text{HNO}_3 + \text{Ca}(\text{OH})_2 = \text{Ca}(\text{NO}_3)_2 + 2\text{H}_2\text{O}$;
- D) $\text{NO} + 0.5\text{O}_2 = \text{NO}_2$;
- E) $3\text{NO}_2 + \text{H}_2\text{O} = 2\text{HNO}_3 + \text{NO}$.

43. For the production of diluted nitric acid from ammonia, the following system is used:

- A) operating at atmospheric pressure;
- B) operating under reduced pressure;
- C) operating at very low temperatures;
- D) operating at elevated temperatures;
- E) operating at elevated pressure.