C) $CaSO_4 + C = 2CaO + 2SO_2 + CO_2$;
D) $CaSO_4 + 4CO = CaS + 4CO_2$;
E) $CaSO_4 + 4H_2 = CaS + 4H_2O$.

36. The process of utilization of phosphogypsum to produce ammonium sulfate occurs in accordance with the reaction:
A) $CaSO_4 + 4CO = CaS + 4CO_2$;
B) $CaSO_4 + C = CaS + 2CO_2$;
C) $CaS + 3CaSO_4 = 4CaO + 4SO_2$;
D) $CaSO_4 + (NH_4)_2CO_3 = (NH_4)_2SO_4 + CaCO_3$;
E) $CaSO_4 + 4H_2 = CaS + 4H_2O$.

37. Methods of purification of extraction phosphoric acid from impurities are:
A) neutralization, evaporation;
B) sublimation;
C) recrystallization, precipitation;
D) filtration, co-precipitation;
E) distillation.

38. Method of purification of extraction phosphoric acid from impurities:
A) distillation, osmotic separation;
B) sublimation;
C) distillation, filtration;
D) organic solvent extraction, filtration;
E) sublimation.

39. Impurities are removed from the extraction phosphoric acid by filtration:
A) Al_2O_3, Fe_2O_3;
B) K_2SiF_6, As, SiF_4;
C) SiO_2, $CaSO_4$;
D) CaF_2, Na_2SiF_6;
E) MgH_2PO_4, SiF_4.

40. For purification of extraction phosphoric acid by extraction method are used:
A) nitric acid, fertilizers, salts;
B) sulfuric acid, bases, salts;
C) alcohols, esters, ketones, sulfonic acids;
D) alkalis, bases;
E) salts of magnesium, aluminum, iron.

41. Decomposition of phosphates by nitric acid to form nitric acid extract proceeds by reaction:
A) $(Ca, Mg)CO_3 + HNO_3 = Ca, Mg(NO_3)_2 + CO_2 + H_2O$;
B) $Ca_5F(PO_4)_3 + 10HNO_3 = 3H_3PO_4 + 5Ca(NO_3)_2 + HF$;
C) $FeO + 3HNO_3 = Fe(NO_3)_3 + NO_2 + 2H_2O$;
D) $CaF_2 + 2HNO_3 = Ca(NO_3)_2 + 2HF$;
E) $Al_2O_3 + 6HNO_3 = 2Al(NO_3)_3 + 3H_2O$.

42. The raw material for the production of thermal phosphoric acid is:
A) yellow phosphorus;
B) phosphorites;
C) apatites;