

## **Questions to prepare for the exam of**

### **" Physical theory of nuclear reactor and installations "**

#### **Part № 1**

1. Physics of Elementary particles
2. List of particles and characteristics
3. Discovering of Nucleon (proton and neutron)
4. Introduction to Nuclear Reactor.
5. Classification of reactors
6. Mechanism of nuclear power reactors
7. Fission and heat generation
8. Mechanism of reactors: Cooling and reactivity control.
9. Electrical power generation
10. The theory of interactions.
11. The theory of weak interactions.
12. The theory of strong interactions.
13. The theory of electromagnetic interactions.
14. The theory of gravity interactions.
15. Classification by type of nuclear reaction

#### **Part № 2**

16. Current technologies
17. How to work with reactors: emergency
18. How to work with reactors: security.
19. How to work with reactors: mechanism
20. Nuclear fuel cycle
21. Natural nuclear reactors
22. Energy of nuclear fission.
23. Mechanisms of nuclear fission.
24. The power rating of a nuclear power reactor
25. Fuelling a nuclear power reactor
26. Theoretical imagination of structure of nuclear interactions
27. The main installations of material world: accelerator
28. Mechanism of accelerator
29. Needed advances In Accelerators science.
30. Technology and related apparatus

#### **Part № 3**

31. How to develop and future of nuclear installations.
32. Particle beams physics.
33. Nuclear reactions in particles physics.
34. Databases on nuclear reactions.
35. Other types of nuclear reactors.
36. Other types of nuclear installations.
37. Main rules when we work with reactor.
38. Give the examples of Nuclear interactions.
39. The theory of interactions.
40. Theoretical imagination of structure of nuclear interactions
41. Energy mechanisms of nuclear fission.
42. Classification by type of nuclear reaction
43. Databases on nuclear reactions.
44. Natural nuclear reactors
45. Current technologies