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| 1 | Give definition and describe the interactions relate to fundamental. | №1 | 22.11.2017 16:20:05 |
| 2 | List the fundamental interactions in ascending order of the relative intensity. | №1 | 22.11.2017 16:59:30 |
| 3 | Describe the gravitational waves and the possible sources of their nature. | №1 | 22.11.2017 16:59:52 |
| 4 | Explain in which physical phenomena is weak interactions occur. | №1 | 22.11.2017 17:00:05 |
| 5 | Desrcibe weak interactions and explain why they are considered as short-action. | №1 | 22.11.2017 17:00:34 |
| 6 | Describe the values of the interaction energy which can be talked about merger of weak and electromagnetic interactions. | №1 | 22.11.2017 17:00:49 |
| 7 | Describe pions and gluons are two kinds of quanta in the strong interaction. | №1 | 22.11.2017 17:01:08 |
| 8 | Describe an importance of neutrinos on thermonuclear processes inside the Sun and stars. | №1 | 22.11.2017 17:01:23 |
| 9 | Describe the registration of neutrinos. | №1 | 22.11.2017 17:01:34 |
| 10 | Give definition and describe neutrino oscillations. | №1 | 22.11.2017 17:01:56 |
| 11 | Describe what changes have been the concept of "rest mass" and "relativistic mass" in recent developments in particle physics. | №1 | 22.11.2017 17:02:10 |
| 12 | Explain the meant of the terms "technology" and "quantum" sensitivity limits in the physical experiment. | №1 | 22.11.2017 17:02:22 |
| 13 | Explain "Colored" and "colorless" particles. | №1 | 22.11.2017 17:03:26 |
| 14 | Give definition and describe the cumulative particle. | №1 | 22.11.2017 17:03:46 |
| 15 | Explain the concept of "mass defect" and how they define the "valley of stability". | №1 | 22.11.2017 17:03:58 |
| 16 | Explain four groups which are divided presently known radioactive processes. | №2 | 22.11.2017 17:04:14 |
| 17 | Characterize the model of "liquid drop" which explains nuclear fission. | №2 | 22.11.2017 17:04:26 |
| 18 | Give definition and describe which nuclei characterized proton and double-proton radioactivity. | №2 | 22.11.2017 17:04:44 |
| 19 | Explain a cluster radioactivity. | №2 | 22.11.2017 17:04:52 |
| 20 | Explain beams of accelerated radioactive nuclei which are used to obtain and study of exotic isotopes. | №2 | 22.11.2017 17:05:04 |
| 21 | Specify the main features and characteristics of the interactions of charged particles. | №2 | 22.11.2017 17:05:21 |
| 22 | Specify the main features of the strong interaction. | №2 | 22.11.2017 17:05:33 |
| 23 | Describe the basic characteristics of the weak interaction. | №2 | 22.11.2017 17:05:48 |
| 24 | Describe the particles or field which creates interaction. | №2 | 22.11.2017 17:05:58 |
| 25 | Describe the particles that are elementary components of matter. | №2 | 22.11.2017 17:06:10 |
| 26 | Explain the meaning of quantum  number "color" for quark. | №2 | 22.11.2017 17:06:20 |
| 27 | Descibe the difference of "gluons" and quarks. | №2 | 22.11.2017 17:06:32 |
| 28 | Expain the meaning and describe Feynman diagrams. | №2 | 22.11.2017 17:06:41 |
| 29 | Give definition and desrcibe Planck's constant. | №2 | 22.11.2017 17:06:51 |
| 30 | Explain the physical meaning of indeterminacy. | №2 | 22.11.2017 17:07:05 |
| 31 | Explain what an important role plays weak interaction  in the formation of our Universe. | №3 | 22.11.2017 17:07:20 |
| 32 | Explain why do we need high-energy particle accelerators and why they can be used to understand the physics of the early Universe. | №3 | 22.11.2017 17:07:31 |
| 33 | Describe the Large Hadron Collider. | №3 | 22.11.2017 17:07:45 |
| 34 | Describe a cyclotron and the basic principles of its operation. | №3 | 22.11.2017 17:07:54 |
| 35 | Give definition and describe Yukawa potential and the Coulomb potential - describe their main characteristics and differences. | №3 | 22.11.2017 17:08:02 |
| 36 | Give definition and describe leptons. Give the types of leptons and  their characteristics. | №3 | 22.11.2017 17:08:11 |
| 37 | Give definition and describe spins of elementary particles. | №3 | 22.11.2017 17:08:21 |
| 38 | Give definition and describe Pauli principle and structure of nuclei. Describe the construction of the electron orbits in atoms. | №3 | 22.11.2017 17:08:30 |
| 39 | Dsecribe Fermi and Bose particles. | №3 | 22.11.2017 17:08:44 |
| 40 | Give examples of the properties of particles associated with quantum number "strangeness". | №3 | 22.11.2017 17:08:54 |
| 41 | Describe the binding energy of the nuclei. | №3 | 22.11.2017 17:09:02 |
| 42 | Explain how to determine the binding energy of the nucleus, knowing the mass of the nucleus, the mass of the proton and neutron. | №3 | 22.11.2017 17:09:12 |
| 43 | Find a specific energy of a nucleus of a helium atom. | №3 | 22.11.2017 17:09:21 |
| 44 | Determine the total binding energy of a nucleus of uranium-238. | №3 | 22.11.2017 17:09:31 |
| 45 | Determine the total specific binding energy of a nucleus of molybdenum- 96. | №3 | 22.11.2017 17:09:55 |
| 46 | Determine the total binding energy of a nucleus of osmium -191. | №3 | 22.11.2017 17:10:09 |
| 47 | Describe the types of radioactivity of different nuclei. | №3 | 22.11.2017 17:10:18 |
| 48 | Describe the reaction of the alpha decay of nuclei. | №3 | 22.11.2017 17:10:26 |
| 49 | Describe the reaction of the beta decay of nuclei. | №3 | 22.11.2017 17:10:35 |
| 50 | Describe reaction of electron capture. | №3 | 22.11.2017 17:10:43 |
| 51 | Give definition and describe gamma and beta radiation of nuclei. | №3 | 22.11.2017 17:10:53 |
| 52 | Analyze the reaction of spontaneous fission of heavy nuclei. Describe the fission products. | №3 | 22.11.2017 17:11:03 |
| 53 | Explain principle of operation of nuclear reactors based on uranium fission. | №3 | 22.11.2017 17:11:12 |
| 54 | Describe fission chain reaction. | №3 | 22.11.2017 17:11:20 |
| 55 | Analyze the reaction of light nuclei. Write the fusion reaction of protons with form of deuterium nuclei. | №3 | 22.11.2017 17:11:31 |
| 56 | Give definition and describe burning the nuclei of hydrogen atoms on the Sun. | №3 | 22.11.2017 17:11:40 |
| 57 | Give definition and describe cycles of thermonuclear burning of hydrogen with form of helium nuclei. | №3 | 22.11.2017 17:11:48 |
| 58 | Explain what means "island of stability" for the nuclei of chemical elements. | №3 | 22.11.2017 17:11:56 |
| 59 | Characterize properties of nuclei far from island of stability. Give examples. | №3 | 22.11.2017 17:12:05 |
| 60 | Explain abundances of chemical elements in nature. | №3 | 22.11.2017 17:12:17 |