| 1 | Describe the absorption of sunlight in the materials | Nº1 |
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| 2 | Characterize the method for calculating the thermal circuit temperature conditions of heat detectors | Nº1 |
| 3 | Analyze the method for calculating the thermal circuit temperature regimes receivers of radiant energy | Nº1 |
| 4 | Describe the photoelectric effect - a quantum phenomenon | Nº1 |
| 5 | Give definition and describe photoelectric Effects | Nº1 |
| 6 | Give definition and describe the spectral characteristics of solar radiation | Nº1 |
| 7 | Explain energy components of solar radiation, solar exposure assessment | Nº1 |
| 8 | Describe geothermal energy | Nº1 |
| 9 | Give the classification of the physical principles of solar thermal energy converters | Nº1 |
| 10 | Explain conversion of solar thermal energy into mechanical energy | Nº1 |
| 11 | Explain conversion of solar energy into thermal energy | Nº1 |
| 12 | Explain conversion of solar thermal energy into chemical energy | Nº1 |
| 13 | Give the physical properties and characteristics of semiconductors | Nº1 |
| 14 | Give definition of semiconductor photodetectors | Nº1 |
| 15 | Describe characteristics of solar cells | Nº1 |
| 16 | Explain use of water resources and wind energy | Nº2 |
| 17 | Describe principles of energy devices based on photosynthesis | Nº2 |
| 18 | Decsribe principles of power devices based on biofuels | Nº2 |
| 19 | Give definition and describe features and biofuels | Nº2 |
| 20 | Describe ecological problems of non-conventional energy sources | Nº2 |
| 21 | Explain environmental problems of the use of renewable energy sources | Nº2 |
| 22 | Explain the use of biofuels for energy purposes | Nº2 |
| 23 | Decsribe thermochemical processes | Nº2 |
| 24 | Give definition and describe reflection and refraction of light at the interface between air and the conductive medium | Nº2 |
| 25 | Give definition and describe photovoltaic effects in thin and thick p-n junction | Nº2 |
| 26 | Decsribe physical features of the contacts metal - semiconductor and heterojunction | Nº2 |
| 27 | Decsribe direct conversion of heat energy | Nº2 |
| 28 | Explain using the energy of ocean currents | Nº2 |
| 29 | Analyze types of power plants based on the use of ocean currents | Nº2 |
| 30 | Give definition and describe power of the tidal currents and tidal water rise | Nº2 |

| 31 | Describe surface wave energy converters | Nº3 |
|----|----------------------------------------------------------------------------------------------------|-----|
| 32 | Explain tidal energy converters upgrades of water | Nº3 |
| 33 | Give definition and describe heat high thermal water | Nº3 |
| 34 | Desrcibe features of use of highly mineralized water sources | Nº3 |
| 35 | Give definition and describe thermal regime of the Earth's crust | Nº3 |
| 36 | Describe energy use of air masses, map and strength of the winds in different regions of the globe | Nº3 |
| 37 | Give definition and describe loss of wind turbines . The theory of the real wind turbine | Nº3 |
| 38 | Explain the classical theory of an ideal wind turbine | Nº3 |
| 39 | Give the classification of wind turbines on the principle of operation | Nº3 |
| 40 | Give the classification of heat accumulators . Pumping and heat exchange envoirenment | Nº3 |
| 41 | Describe solar collectors | Nº3 |
| 42 | Describe concentrating solar collector | Nº3 |
| 43 | Explain structures and materials of solar cells | Nº3 |
| 44 | Analyze the problem of the interaction energy and the environment | Nº3 |
| 45 | Give definition and describe adiabatic process in gases | Nº3 |
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