

Reference Materials for HSE Global Scholarship Competition — 2022

Psychology

10th Grade

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Topic 1. Biology as Science

Biology as science. The role of biology in the practical activity of people. Variety of organisms. Distinctive features of representatives of different kingdoms of life. Living organism study methods — observation, measurement, experiment.

Topic 2. Plant Kingdom

Plants. Plant cells, tissues and organs. Vital functions — metabolism and energy transformation, nutrition, photosynthesis, breathing, removal of metabolic products, substance transportation. Regulation of vital functions. Movement. Growth, development and reproduction. The variety of plants, classification principles. Algae, mosses, ferns, gymnosperm and flowering plants. The importance of plants in nature and human life.

Essential agricultural crops. Poisonous plants. Protection of rare and endangered plant species. Major plant communities. Complication of plants in the process of evolution.

Topic 3. Animal Kingdom

Animals. Animal body structure. Vital functions and their regulation in animals. Reproduction, growth and development. Behavior. Irritability. Reflexes. Instincts. Animal variety (types, chord classes), the role of animals in the nature and human life. Agricultural and domestic animals. Prevention of diseases caused by animals. Complication of animals in the process of evolution. Adaptation to various habitats. Protection of rare and endangered animal species.

Topic 4. Structure and Functions of Human Body

Support and movement. Musculoskeletal system. Prevention of injuries. The importance of exercises and labor culture for the skeleton and muscle formation. First aid for musculoskeletal system injuries.

Internal environment of the body, the importance of its stability. Substance transport. Blood and lymphatic systems. Blood. Blood types. Lymph. Blood transfusion. Immunity system. Antibodies. Allergic reactions. Preventive vaccinations. Therapeutic serum.

The cardiovascular system. Structure and functioning of the heart. Heart diseases and prevention measures.

Breath. Respiratory system. The structure of respiratory organs. Gaseous exchange in lungs and tissues. Hygiene of respiratory organs. Diseases of respiratory system and their prevention. Examples of first aid in the case of carbon monoxide poisoning, drowning rescue. Infectious diseases and prevention measures. Health effects of tobacco smoking.

Nutrition. Digestion. Digestive system. Digestive system disorders and their prevention.

The metabolism and energy transformation in the body. Constructive and energy exchange. The exchange of water, mineral salts, proteins, carbohydrates and fats. Vitamins. Balanced diet. Norms and dietary regime.

Skin coverings. The structure and functions of the skin. The role of the skin in thermoregulation. Skin, hair, nail care. First aid techniques in the case of injuries, burns, frostbites and their prevention. Body conditioning.

Excretion. The structure and functions of the excretory system. Diseases of the urinary system organs and their prevention. Reproduction and development. Reproductive glands and germinal cells. Pubertal development. Sexual transmitted infections, their prevention. HIV and its prevention. Hereditary diseases. Medical and genetic counseling.

Fertilization, prenatal development. Pregnancy. Harmful effects smoking, alcohol, drugs on the development of the organism. Childbirth. Development after birth.

Topic 5. Sensory Organs and Perception

Sensory organs. The structure and functions of the vision and hearing organs. Sight and hearing deterioration and its prevention. Vestibular system. Muscular and skin senses. Sense of smell. Taste.

Topic 6. Nervous System

Neurohumoral regulation of vital functions of the body. Nervous system. Reflex and reflex arc.

Topic 7. Endocrine System

Endocrine system. Hormones, mechanisms of their action on cells. Violations of nervous and endocrine systems and their prevention.

Topic 8. Human Behavior

Human behavior and psyche. Unconditioned reflexes and instincts. Conditioned reflexes. Aspects of human behavior.

Topic 9. Psyche and Mental Processes

Speech. Thinking. Thinking and activity. Attention. Memory. Emotions and feelings. Sleep.

Topic 10. Individual and Social Human Aspects

Temperament and character. Aptitudes and talents. Interpersonal relationships. The role of training and education in the development of human behavior and psyche.

Man as a result of biological, social and cultural evolution. The concept of culture. Needs and interests. Worldview. The spiritual life of a person. Values and norms. Motives and preferences.

Public and individual consciousness. Socialization of the individual. Social role. Individual self-consciousness and social behavior. The concept of personality. Freedom and responsibility. Deviant behavior and its types.

II. Recommended sources:

Primary sources

Kleinman P. *Psych 101: Psychology Facts, Basics, Statistics, Tests, and More!* (Adams 101), 2012.

Myers, D. G. (2010). *Social Psychology*. The McGraw-Hill Companies, New York.

Taylor, D. J.N., Green, P. O., Stout, G. W., Soper, R. (2008). *Biological Science*. Cambridge University Press, 992 pp.

Additional sources

Berne, E. (2012). *Games People Play*. Penguin Books Ltd.

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Nicholls, J., Martin, A. R., Brown, D. A., Diamond, M. E., Cattaneo, A., De-Miguel, F. F. (2012). *From Neuron to Brain*. Sinauer Associates, 912 pp.

Smith, C. (2008). *Biology of Sensory Systems*. John Wiley & Sons.