

مباراة الدخول 2020 – 2021

مسابقة في العلوم الطبيعية (B Series)

عدد الصفحات: ٥

المدة : ٤٥ دقيقة

1- For each question, circle the correct answer (only one answer is correct)

- The basic metabolism:
 - a- Corresponds to the essential energy needed for a minimal physical activity and the maintenance of the organism
 - b- Its measurement is realized at night after a meal
 - c- Its measurement doesn't take into consideration room temperature
 - d- All of the above
- The balanced ration of a sedentary adult includes:
 - a- 3 parts of carbohydrates, 3 parts of lipids, 1 part of proteins
 - b- 4 parts of carbohydrates, 2 parts of lipids, 1 part of proteins
 - c- 4 parts of carbohydrates, 1 part of lipids, 2 parts of proteins
 - d- 5 parts of carbohydrates, 1 part of lipids, 2 parts of proteins
- Marasmus is a disease:
 - a- That is chronic
 - b- Due to vitamin deficiency
 - c- Caused by protein and energetic deficiency characterized by a reduction of adipose tissue and muscles
 - d- Characterized by bleeding of the gum and teeth loss
- Starchy foods are:
 - a- Cereals, vegetables and potatoes
 - b- Foods rich in slow sugar (starch)
 - c- Used for long term energetic needs
 - d- All of the above
- Avitaminosis is a disease caused by:
 - a- Vitamin deficiency
 - b- Lack of certain proteins
 - c- Overeating
 - d- Lack of certain carbohydrates
- Kwashiorkor is due to the absence in the diet of:
 - a- Lipids
 - b- Proteins of animal origin
 - c- Cereals
 - d- Vitamins

- Proteins consist of:
 - a- Carbohydrates
 - b- Fatty acids and amino acids
 - c- Peptides, amino acids and proteins
 - d- Fatty acids, alcohols and esters
- Cellulose:
 - a- Consists of plant fibers
 - b- Is an unused sugar by the organism
 - c- Ensures the good functioning of the intestine by promoting the intestinal transit
 - d- All of the above
- The final result of the lipid digestion is:
 - a- A combination of fatty acids and glycerol
 - b- A combination of fatty acids and cholesterol
 - c- Fatty acids only
 - d- A combination of amino acids
- A required or an essential substance is:
 - a- Of lipid nature, as fatty acids
 - b- Of protein nature, as amino acids
 - c- Synthesized by the organism
 - d- Non synthesized by the organism
- A balanced diet:
 - a- $\frac{\text{lipids of animal origin}}{\text{lipids of plant origin}} = \frac{1}{3}$
 - b- $\frac{\text{proteins of animal origin}}{\text{proteins of plant origin}} = 2$
 - c- $\frac{\text{lipids of animal origin}}{\text{lipids of plant origin}} = 1$
 - d- $\frac{\text{sugars of rapid assimilation}}{\text{sugars of slow assimilation}} = \frac{1}{3}$
- Cocaine:
 - a- improves the dopamine recapture
 - b- improves intense joy and euphoria
 - c- is an endogenous chemical substance
 - d- all of the above
- Atherosclerosis is a disease:
 - a- that causes narrowing of coronary arteries
 - b- caused by undereating
 - c- due to elevated level of amino acids in blood
 - d- linked to a dilation in the internal wall of the coronary artery

- A neurotransmitter is:
 - a- a substance stored in the post-synaptic neuron
 - b- a substance stored in the pre-synaptic neuron
 - c- a chemical substance synthesized in the axon
 - d- all of the above
- The role of lipids in the organism:
 - a- They are essential for the structure of our body (brain, ...)
 - b- They allow the transport of liposoluble vitamins (A, D, E, K)
 - c- An important energetic role due to their high caloric value (9Kcal/g)
 - d- All of the above
- Cholesterol in the organism is:
 - a- synthesized by the liver
 - b- provided by the diet
 - c- produced from amino acids
 - d- produced from glucose
- The nervous message:
 - a- is an electric phenomenon that propagates along a nerve
 - b- is the same before and after a nervous center
 - c- can be generated by any excitable cell
 - d- is coded in amplitude modulation of the action potential
- Which of these structures is a part of the central nervous system
 - a- the optic nerve
 - b- the spinal ganglion
 - c- spinal cord
 - d- bone marrow
- The action potentials:
 - a- Circulate along the neurons
 - b- Are the elementary units of the nervous messages
 - c- Are coded in frequency modulation
 - d- All of the above
- Parkinson's disease:
 - a- causes limb tremors when resting
 - b- Is not a neurodegenerative disease
 - c- Doesn't cause a slow and progressive destruction of certain neurons of the brain
 - d- Has no effect on muscles and movement
- The synapses can be:
 - a- All only excitatory
 - b- Excitatory and inhibitory
 - c- All only inhibitory
 - d- Neither excitatory nor inhibitory

- The nerves:
 - a- contain only one type of nerve fiber
 - b- are constituted of only a very high number of myelinated nerve fibers
 - c- can link receptor and effector organs to the central nervous system
 - d- All of the above
- The organism's needs are permanent because the organism:
 - a- Is in a perpetual renewal
 - b- Is in a perpetual growth
 - c- Doesn't suffer daily losses
 - d- All of the above
- Obesity is caused by:
 - a- sedentarism
 - b- a single physical activity
 - c- an undernutrition
 - d- a non-hereditary factor
- Characteristics of drug addicts are:
 - a- A tendency to decrease drug doses
 - b- Physical and psychological addiction
 - c- The deprivation or the withdrawal passes without physical and psychological symptoms
 - d- Beneficial effects for the individual and the society
- Which of these structures is a part of the central nervous system?
 - a- the optic nerve
 - b- the spinal ganglion
 - c- spinal cord
 - d- bone marrow
- Morphine:
 - a- Is a neurotransmitter secreted by neurons
 - b- Morphine and enkephalin are antagonist substances
 - c- Totally inhibits pain message
 - d- Acts on dopamine recapture
- The body mass index (BMI):
 - a- Mass in Kg / (height in m²)
 - b- Mass in g / (height in m²)
 - c- Mass in Kg / (height in cm²)
 - d- Mass in g / (height in cm²)
- A diet completely deprived of lipids leads to:
 - a- An avitaminosis
 - b- Cardiovascular diseases
 - c- Infertility
 - d- obesity

- The neurons are:
 - a- Only nerves
 - b- Only nerve fibers
 - c- The cells constituting the nervous tissue
 - d- The only constituents of the white matter of the nervous centers

2- Answer by true (T) or false (F) to the following questions:

T/F	
	Overeating is the consumption of excessive food which energy intake exceeds the needs which leads to obesity
	The growth, the gestation, breastfeeding and the synthesis of damaged tissues implies an additional supply of proteins
	Oils and margarine are rich in saturated fatty acids, in liposoluble vitamins and in cholesterol
	Alzheimer's disease is caused by acetylcholine deficiency
	Energy expenditure depends on gender, practiced activity, body mass and climate
	The action potential corresponds to inversion of the polarization of the nerve fiber that becomes temporarily negative at the inside
	The food ration is all of the consumed food during 24h
	Sensitive neurons conduct the nervous message from sensory receptors to the central nervous system
	The speed of the influx does not depend on the nerve fiber diameter
	An unstimulated neuron has a membrane potential or resting potential equals to -70mV

Good Work