PU Ph D Food Science and Nutrition

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161 PU_2015_152
Among the following, which is best maturity index for Grape?

- Colour
- TSS
- Shape
- Size

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114 PU_2015_152
The first crop plant genome sequenced:-

- Cotton
- Rice
- Tobacco
- Maize

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165 PU_2015_152
Which is the richest dietary source of n-3 long chain polyunsaturated fatty acids?

- salmon
- soyabean
- flax seed
- beef

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185 PU_2015_152
Foods that have a pH>5.3 are considered to be _____.

- high-acid foods
- acid foods
- low-acid foods
- medium-acid foods

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_____ is the ingredient that imparts a unique color and flavor to cured neat products.

- Sodium chloride
- Sodium citrate
- Sodium nitrite

- Sodium nitrate

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Which of the following enzyme(s) is/are required for lactose fermentation?

- Transacetylase
- β-galactosidase
- Galactosidepermease
- All of these

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Which of the following statements about ATP-binding cassette (ABC) proteins is incorrect?

- ATP-binding cassette (ABC) proteins have ATP-binding transmembrane domains
- ATP-binding cassette (ABC) proteins have ATP-binding cytoplasmic domains
- The multidrug resistance protein (MDR protein) is an ATP-binding cassette (ABC) protein
- A number of genetic diseases are associated with deficiencies in ATP-binding cassette (ABC) proteins

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200 PU_2015_152

Which of the following best describes the polysaccharide amylose?

- α 1,4-O-α-linked poly-D-mannose
- α 1,4-O-β-linked poly-D-glucose
- α 1,4-O-α-linked poly-D-glucose
- an alternating 1,4-O-α/β-linked poly-D-glucose

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Why cannot fatty acids be converted into glucose in starvation?

- Acetyl CoA cannot be converted into pyruvate
- Fatty acids are esterified to triacylglycerols
- Fatty acids are transported on albumin which interferes with their metabolism
- Fatty acids are oxidised in mitochondria and glucose is synthesised in the cytosol

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Where do precursor T-lymphocytes develop into fully competent but not yet activated T- cells?

- The spleen
- The thymus gland

- The lymph nodes
- The bone marrow

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The effectiveness of many chemical preservative depends primarily on the food:-

- Water content
- pH
- Temperature
- Acidity

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133 PU_2015_152

Liver is the largest gland associated with several functions. Which one of the following is stated incorrect?

- Makes all the cholesterol that human body needs
- Secrete hormone called gastrin
- Stores glucose as glycogen
- Manufactures bile, converts the amino group to urea

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111 PU_2015_152

Syntrophism is a type of:-

- Mutalism
- Parasitism
- Synergism
- Commensalism

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Which of the following is not a function of folate:-

- Purine synthesis
- Conversion of tryptophan into niacin
- Conversion of serine into glycin
- Pyrimidine synthesis

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Which of the following statements is false with respect to an enzyme's ability to catalyse a reaction?

- An enzyme binds reactants such that they are positioned correctly and can attain their transition-state configurations

- An enzyme allows the reaction to go through a less stable transition state than would normally be the case
- An enzyme provides a reaction surface and a suitable environment for the reaction to take place
- An enzyme can weaken bonds in reactants through the binding process

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118 PU_2015_152

Fats of fish are readily digestible because they are:-

- Rich in unsaturated fats
- Rich in saturated fats
- Digestibility has no relation with saturation of fat
- Lipoxidase enzymes

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The chief spoilage organisms on smoked fish are:-

- (a) Molds
- (b) Bacteria
- (c) Both (a) and (b)
- (d) Fungi

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Of the estimated 10,000 products introduced each year approximately_____ percent will survive in the marketplace.

- 1
- 50
- 75
- 26

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By using _____ the microbial species introduced for fermentation can be controlled.

- a mother culture
- natural contamination
- a starter culture
- back slopping

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143 PU_2015_152

Which of the following cell types or systems is not part of an innate immune response to a pathogen?

- The inflammatory response
- Natural killer cells
- Cytotoxic T-lymphocytes
- Phagocytes

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147 PU_2015_152

Which of the following statements about SDS polyacrylamide gel electrophoresis is correct?

- Proteins are solubilized but not denatured when separated by SDS polyacrylamide gel electrophoresis
- SDS polyacrylamide gel electrophoresis separates proteins on the basis of charge
- SDS polyacrylamide gel electrophoresis separates proteins on the basis of size
- Wanted proteins can be tested for their biological activity after separation by SDS polyacrylamide gel electrophoresis

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Regarding gastro-intestinal function:-

- Distension of the ileum stimulates gastric motility
- Total gastrectomy leads to malabsorption of vitamin B_{12}
- The presence of large amounts of fat in the chyme will accelerate gastric emptying
- Aldosterone inhibits the absorption of sodium and water by the large intestine

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Lecithins are composed of:-

- Glycerol + Fatty acids + Phosphoric acid + Choline
- Glycerol + Fatty acids + Phosphoric acid + Betaine
- Glycerol + Fatty acids + Phosphoric acid + Serine
- Glycerol + Fatty acids + Phosphoric acid + Ethanolamine

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Identify the strongest form of intermolecular bonding that could be formed involving the residue of the amino acid serine.

- ionic bond
- hydrogen bond
- van der Waals interactions
- none of the above

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117 PU_2015_152

The red or pink color of the fish is generally caused from the growth of:-

- *Sarcina*
- *Micrococcus or Bacillus species*
- *Molds or yeasts*
- All of these

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A food that can be stored at room temperature for a prolonged or indefinite time period with minimal quality deterioration is said to be _____.

- room stable
- shelf superior
- shelf stable
- room superior

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Process lethality at a specified temperature is a multiple of:-

- Z-value
- Final concentration of microbes
- Decimal reduction time
- Initial concentration of microbes

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HACCP is an acronym that stands for _____.

- Have A Cup of Coffee and Pray
- Hazard Analysis and Critical Control Point
- Hazard Analysis and Critical Command Program
- Hazard Analysis and Critical Control Program

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Milk undergoes a process called _____ that is intended to break down fat globules so they are smaller and more uniform in size.

- emulsification
- encapsulation
- homogenization

- pasteurization

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Which of the following reactions constitutes an 'oxidative decarboxylation?

- The conversion of pyruvate into lactate
- The conversion of pyruvate into acetyl CoA
- The conversion of lactate into pyruvate
- The conversion of pyruvate into oxaloacetate

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The water content (as a percentage of total body mass) of an adult human male is:-

- Slightly less than that of an adult female
- Around 60% total body weight
- The same as that of a newborn baby
- Is mainly due to the volume of the blood

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E. coli O157:H7 is thought to have acquired enterohemorrhagic genes from:-

- *Bacillus*
- *Shigella*
- *Campylobacter*
- *Clostridium*

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The first transgenic plant to be produced:-

- Cotton
- Maize
- Tobacco
- Rice

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116 PU_2015_152

Curacin A is a potent anti-tumour agent obtained from a marine:-

- Aspergillus
- Cyanobacterium
- Actinomyces

- Corol reef

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163 PU_2015_152
Mostly dry fruit are rich in:-

- Carbohydrates
- Fats
- Vitamins
- Protein

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149 PU_2015_152
_____ is a fructosan.

- Cellulose
- Inulin
- Glycogen
- Agar

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Bovine group A rotavirus contain:-

- ds DNA
- ss DNA
- ss RNA
- ds RNA

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146 PU_2015_152
Which is an important function of cholesterol in cell membranes

- It allows polar substances to pass through the membrane
- It stabilises the structure of mammalian membranes
- It increases the fluidity of the membrane at 37°C
- It acts as a fluidity barrier in bacterial membranes

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132 PU_2015_152
Which factor is responsible for inhibition enzymatic process during feedback?

- Substrate
- Enzymes
- Temperature

- End product

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188 PU_2015_152

To determine the amount of free water available for microorganisms to grow in a food product, _____ is measured.

- water concentration
- water activity
- moisture content
- relative humidity

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207 PU_2015_152

Which of the following statements is incorrect regarding transport proteins?

- They serve to carry polar molecules across the hydrophobic cell membrane
- They are required to transport hydrophobic steroids across cell membranes
- They are present in cell membranes
- They are required to transport amino acids across cell membranes

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Chemically leavened dough uses _____ as a leavening agent.

- steam
- baking powder
- yeast
- air

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202 PU_2015_152

In a normal healthy individual with a total lung capacity of 6 litres:-

- The functional residual capacity would be about 2 litres
- The FE_{V1} would be equivalent to about 1.5 litres
- The tidal volume at rest is about 1 litre
- The expiratory reserve volume at rest would be about 2 litres

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166 PU_2015_152

Vitamin B_1 is stable in acid, unstable in aqueous solutions of PH more than:-

- 4.5
- 5.0

- 4.0
- 3.5

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187 PU_2015_152

Which of the following foods cannot be effectively frozen?

- lettuce
- carrots
- broccoli
- cabbage

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209 PU_2015_152

A subject with a body weight of 65 kg was injected with 10 ml of a 1% (w/v) solution of Evans Blue. After 10 min, the blood was sampled and found to contain 0.037 mg/ml of the dye. What is the plasma volume?

- 5 litres
- 0.27 litres
- 2.70 litres
- 27 litres

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Pantothenic acid has a molecule of pantoic acid that is linked with:-

- b-cysteine
- phosphate
- b-alanin
- b-methinonine

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Which of the following terms describes organism that derives in cold?

- Psychrophiles
- Thermophiles
- Mesophilies
- Aerophiles

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Which of the following is NOT a type of food processing?

- Cold processing

- Irradiation
- Rehydration
- Fermentation

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112 PU_2015_152
The best source of salt tolerant gene:-

- Sea anemones
- Mangroves
- Mussels
- Fishes

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_____ is responsible for the bright cherry red color of ground beef.

- Metmyoglobin
- Oxymyoglobin
- Myoglobin
- Dinitrosohemochromogen

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_____ is a structural homopolysaccharide.

- Hyaluronic acid
- Inulin
- Starch
- Chitin

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204 PU_2015_152
Histidine is degraded to to α-ketoglutarate and is described as a:-

- Gluco amino acid
- Glucogenic amino acid
- Keto-gluco acid
- Ketogenic amino acid

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160 PU_2015_152
Bitterness in peach is due to:-

- Sugar

- Hydrocyanin
- Prunasin acid
- Malic acid

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115 PU_2015_152

Primary step in protein purification includes:-

- Homogenization
- Differential centrifugation
- Solubilisation
- All of these

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169 PU_2015_152

_____ percent of the iodine in the body is present in the thyroid gland where it is used in the synthesis of several thyroid hormones.

- 50
- 80
- 60
- 70

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142 PU_2015_152

Which of the following statements about nicotinamide adenine dinucleotide (NAD^+) is correct?

- NAD^+ is a prosthetic group for several dehydrogenases
- NAD^+ is the initial electron donor in many metabolic oxidation reactions
- NAD^+ is the initial electron acceptor in many metabolic oxidation reactions
- NADH is the initial electron acceptor in many metabolic oxidation reactions

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162 PU_2015_152

Maximum density of water is at a temperature of:-

- 7°C
- -7°C
- 0°C
- 4°C

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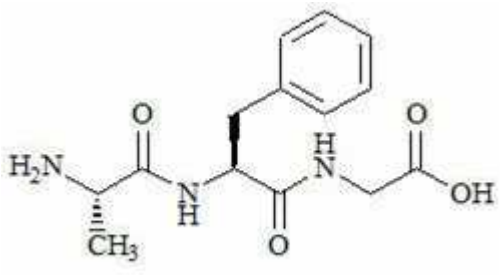
205 PU_2015_152

Identify the correct name for the following peptide:-



- L-alanyl-glycyl-L-phenylalanine
- L-alanyl-L-phenylalanyl-glycine
- glycyl-L-phenylalanyl-L-alanine
- L-phenylalanyl-L-alanyl-glycine

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Desmosine is an unusual amino acids found in:-

- Actin
- Elastin
- Myosin
- Troponin

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What mechanism is responsible for movements of eukaryotic cilia and flagella:-

- Dynein moving on microtubules
- Kinesin moving on microfilaments
- Myosin moving on microfilaments
- Dynein moving on microfilaments

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Sodium or potassium meta bi sulphate is added to crushed grapes to:-

- enhance the flavouring compound
- check the undesirable organisms
- maintain pH
- all of the above

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245 PU_2015_152

Which of the following is not the immunomagnetic particle?

- Polyacrolein/ iron sulphate particles
- Polystyrene paramagnetic microparticle
- Polysterene/divenyl- benzene
- Dynabeads

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Flurosecent microscope is based on the ability of certain molecules to:-

- Observe light of a constant wavelength
- Observe light of a given wavelength & then emit light of short wavelength
- Observe light of a given wavelength & then emit light of longer wavelength
- Observe light of many different wavelength

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Cyanobacteria differ from purple and green photosynthetic bacteria because:-

- They use H_2S as an electron donor
- They produce oxygen during photosynthesis
- They have a membrane enclosed nucleus
- They do not require light

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233 PU_2015_152

Three dimensional images of the surface of the cells could be visualized through:-

- Scanning Electron Microscope
- Compound Microscope
- Transmission Electron Microscope
- Fluorescent Microscope

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243 PU_2015_152

Which substrate is used in the fermentation of citric acid?

- Beet molasses
- Sucrose
- Starch hydrolysate
- All of these

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241 PU_2015_152

Maximum size of foreign DNA that can be inserted into an insertion vector is:-

- 18 kb
- 50 kb
- 35 kb
- 27 kb

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248 PU_2015_152
Most viral capsids have:-

- 16 faces
- 08 faces
- 20 faces
- 12 faces

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249 PU_2015_152
NaCl can acts as:-

- (a) antagonist at optimal concentrations
- (b) synergistically if added in excess of optimum level
- (c) Both (a) and (b)
- (d) None of the above

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250 PU_2015_152
Hemicelluloses are:-

- Polymer of cellulose
- Isomers of cellulose
- Polymer of Talose
- Derivatives of cellulose

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242 PU_2015_152
Cosmids lack:-

- origin of replication
- genes coding for viral proteins
- marker genes coding for replication
- cleavage site for the insertion of foreign DNA

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227 PU_2015_152
Which statement is true of glucokinase?

- It has a lower Km for glucose than does hexokinase
- It catalyses the phosphorylation of fructose
- It is inhibited by glucose 6 phosphate
- It is found in the liver

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228 PU_2015_152

Which of the following contributes nitrogen atoms to both purine and pyrimidine:-

- Aspartate
- Carbomoyl phosphate
- Glutamine
- Carbon di oxide

75 of 100

240 PU_2015_152

Which of the following is not true for the thermal resistance of the bacterial cells?

- Higher optimal and maximal temperatures for growth, higher the resistance
- Bacteria that clump considerably or form capsules are difficult to kill
- Cocci are usually more resistant than rods
- Cells low in lipid content are harder to kill than other cells

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246 PU_2015_152

The spindle forms in the:-

- S phase
- G_2 phase
- M phase
- G_1 phase

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225 PU_2015_152

Heterotrophic Enzymes are:-

- Have same Vmax but different Km values
- Modified by their substrate concentration
- Different Isoenzymes
- Stimulated or inhibited by an effector or modulator molecule

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247 PU_2015_152

The major protein in corn is:-

- Zein
- Hordenin
- Glutenin
- Oryzenin

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226 PU_2015_152
In pentose phosphate pathway:-

- Only the C1 carbon of glucose is oxidized to CO_2
- All the carbons of glucose are oxidized to CO_2
- C_4 and C_5 of glucose are oxidized to CO_2
- No decarboxylation occurs

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229 PU_2015_152
Plastocyanin is a mobile electron carrier between:-

- Oxygen evolving complex and PS11
- Cytochrome bf complex and PS1
- PS1 and ferridoxin
- PS11 and Cytochrome bf complex

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291 PU_2015_152
The % Daily Value is based on a _____ calorie diet.

- 2000
- 2500
- 3000
- 3500

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270 PU_2015_152
Allosteric enzymes have modulators for:-

- Activation only
- Inhibition only
- Both activation and inhibition
- Reduction in activation energy

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296 PU_2015_152
Adulteration of edible oil by mineral oil can b identified by:-

- Boudin's test
- Holde's test
- Halman's test
- Carl's test

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273 PU_2015_152
ELISA test is used for:-

- Protein testing
- Purity testing
- Separate viral RNA
- Isolate DNA sequence

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263 PU_2015_152
Which of the following enzyme is not protein in nature?

- Trypsin
- Hexokinase
- Ribozyme
- None of the above

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278 PU_2015_152
Which of the following is called as the Anthony's fire?

- Aflatoxin infection
- Botulism
- Fumonisin infection
- Ergotism

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271 PU_2015_152
At temperature near freezing point, the enzymes are:-

- Inactivated
- Activated
- Slightly activated
- Denatures

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262 PU_2015_152
The net yield of ATPs in complete oxidation of glucose in aerobic respiration is:-

- 8
- 40
- 38
- 6

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294 PU_2015_152
Aflatoxin M is found in:-

- Milk
- Groundnut
- Wheat
- Soybean

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260 PU_2015_152
Fiske and Rao method is used for the estimation of:-

- Pectin
- Phospherous
- Pentathonic acid
- Phytates

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274 PU_2015_152
Which one yield maximum energy?

- Anaerobic resiration
- Glycolysis
- Aerobic respiration
- Kreb Cycle

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292 PU_2015_152
Water functions in the body to:-

- Serve as a medium for chemical reactions
- Dissolve oxygen
- Induce glycogen
- Moderate metabolism

93 of 100
295 PU_2015_152
Roquefortine is:-

- Bacterial toxin
- Antinutritional factor
- A fermented product
- Mycotoxin

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277 PU_2015_152
End product of β-oxidation of fatty acids is:-

- Acetyl co A
- CO_2 and H_2O
- Acetone
- ATP

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275 PU_2015_152
Salivary pH is:-

- 3.5
- 9.4
- 7.1
- 5.6

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293 PU_2015_152
A calorie is the amount of energy required to raise _____ of water one degree _____.

- 1 pound, Centigrade
- 1 ounce, Fahrenheit
- 1 gram, Centigrade
- 1 kilo, Fahrenheit

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290 PU_2015_152
Palatinose is isomer of sucrose and differ from it having:-

- β-1,6-glycosidic bond
- A-1,6-glycosidic bond
- β-1,2-glycosidic bond
- α-1,4-glycosidic bond

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272 PU_2015_152
Enzymes functional in cells are called:-

- Apoenzyms
- Isoenzymes
- Endoenzymes
- Exoenzymes

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Blocking enzyme action through blocking its active site is:-

- Competitive inhibition
- Allosteric inhibition
- Feedback inhibition
- Non competitive inhibition

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A reduced compound is:-

- NADH
- ADP
- NAD
- FAD