National Testing Agency

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Biomembranes and Bioenergetics

Group Number :	1
Group Id :	709597102
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Group Marks:	100

Biomembranes and Bioenergetics

Section Id :	709597103
Section Number :	1
Section type :	Online
Mandatory or Optional:	Mandatory
Number of Questions:	100
Number of Questions to be attempted:	100
Section Marks:	100
Display Number Panel:	Yes
Group All Questions:	No

Sub-Section Number:	1
Sub-Section Id:	709597112
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 70959710067 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Stable lipid bilayer membranes were first reported by

a. Langmuir and Blodgett
b. McConnel
c. Bangham
d. Meuller

Question Number : 2 Question Id : 70959710068 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Fluid Mosaic Membrane was put foward by

a. Danielli and Davson
b. Singer and Nicolson
c. Watson and Crick
d. Schleiden and Schwann

Question Number : 3 Question Id : 70959710069 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Glycolipids in plasma membrane are usually located at

a. Both the outer and inner leaflets of the PM
b. Outer leaflet of PM
c. Inner leaflet of PM
d. Depends on the cell type

Question Number : 4 Question Id : 70959710070 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Membrane proteins exhibit

a. Flip-flop motion
b. Lateral diffusion
c. Rotational diffusion
d. Both a and b

Question Number : 5 Question Id : 70959710071 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In cold temperatures, poikilotherms maintain their membrane fluidity by

a. Alteration of lipid class
b. Increase in fatty acyl unsaturation
c. Change in lipid-protein ratio
d. All of the above

Question Number : 6 Question Id : 70959710072 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Glycophorin A is

a. multipass transmembrane protein
b. a glucose transporter
c. a receptor protein
d. a protein component of the RBC membrane cytoskeleton

Question Number : 7 Question Id : 70959710073 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

RBCs in blood repel each other due to

a. The concave shape of RBC
b. Lack of nucleus
c. Glycophorin A in RBC membrane containing sialic acid residues
d. negatively charged amino acids

Question Number : 8 Question Id : 70959710074 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____ are fluid-filled, membrane-bound spherical vesicles surrounded by a single, continuous lipid bilayer, resembling a natural membrane.

a. Liposomes

b. Micelles

c. Lysosomes

d. BLM s

Question Number : 9 Question Id : 70959710075 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is a cytoskeletal protein?

a. Spectrin

b. Glycophorin A

c. Glycophorin B

d. Band 3 protein

Question Number : 10 Question Id : 70959710076 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The erythrocyte transporter GLUT1 is an example of

Simple diffusion

Facilitated transport

Active transport

Secondary active transport

Question Number : 11 Question Id : 70959710077 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The main function of Band 3 protein in plasma membrane of RBCs are

a. Exchange of Cl^- ions with bicarbonate ions

b. Exchange of H^+ ions with Cl^- ions

c. Exchange of H^+ ions with bicarbonate ions

d. Exchange of K^+ ions with Na^+ ions

Question Number : 12 Question Id : 70959710078 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is mot energetically favourable and does not occur spontaneously in cell membranes?

a. Rotation of membrane proteins

b. Lateral movementsof phospholipids

c. Rotation of membrane phospholipids

d. Flip-flop of phospholipids to the opposite leaflets

Question Number : 13 Question Id : 70959710079 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following does not take part in cell-cell interaction?

a. Selectin
b. Integrin
c. Glycophorin
d. Cadherin

Question Number : 14 Question Id : 70959710080 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

. Membrane fluidity is influenced by

a. Presence of unsaturated fatty acids
b. Presence of cholesterol
c. Temperature
d. All of the above

Question Number : 15 Question Id : 70959710081 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

.Which of the following facilitate membrane fusion?

a. SNAREs
b. Caveolins
c. Lipid rafts
d. Cadherins

Question Number : 16 Question Id : 70959710082 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

. Depolarization of nerve cell membrane occurs because

a. more K^+ diffuse into the cell than Na^+ diffuse out of it.
b. more K^+ diffuse out of the cell than Na^+ diffuse into it.
c. more Na^+ diffuse into the cell than K^+ diffuse out of it.
d. more Na^+ diffuse out of the cell than K^+ diffuse into it.

Question Number : 17 Question Id : 70959710083 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An example of an inhibitory neurotransmitter is

a. Acetylcholine
b. GABA
c. Adrenaline
d. Serotonin

Question Number : 18 Question Id : 70959710084 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

.. Ion channels at the post synaptic cell membranes are

a. voltage-gated
b. non-gated
c. ligand gated
d. mechanically gated

Question Number : 19 Question Id : 70959710085 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

.Lysosomal proteins are transported to lysosmes by

a. COPI coated vesicles
b. COPII coated vesicles
c. Clathrin coated vesicles
d. Protein translocators on lysosomal membranes

Question Number : 20 Question Id : 70959710086 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

.Sar1 is a GTP binding protein that causes

a. Assembly and binding of COPII coat proteins to vesicle membrane
b. Assembly and binding of COPI coat proteins to vesicle membrane
c. Binding of cargo receptor molecules
d. Binding of clathrin coat proteins

Question Number : 21 Question Id : 70959710087 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

.Resident protein molecules of the ER or the Golgi apparatus are retrieved by the

a. Clathrin coated vesicles
b. COPI coated vesicles
c. COPII coated vesicles
d. All of the above

Question Number : 22 Question Id : 70959710088 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

. Which of the following is not a secondary active transporter?

a. Na^+/Ca^{2+} antiporter
b. Na^+/H^+ exchanger
c. Na^+/K^+ pump
d. Na^+/glucose symporter

Question Number : 23 Question Id : 70959710089 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Band 3 protein of the RBC membrane is

a. Anion transporter
b. Cation transporter
c. Na^+/K^+ pump
d. Ankyrin

Question Number : 24 Question Id : 70959710090 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In cells, such as those lining the small intestine and the kidney tubules, active glucose absorption occurs due to symport with

a. H^+ ions
b. Ca^+ ions
c. K^+ ions
d. Na^+ ions

Question Number : 25 Question Id : 70959710091 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Antiporters are also called

a. Co-transporters
b. Exchangers
c. ATPases
d. Ion pumps

Question Number : 26 Question Id : 70959710092 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The Na^+/glucose transporter is an example of

a. Active transport
b. Symport
c. Antiport
d. Uniport

Question Number : 27 Question Id : 70959710093 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is an example of secondary active transport?

a. Na^+/Ca^{2+} antiporter
b. Na^+/K^+ pump
c. H^+ pump
d. GLUT transporter

Question Number : 28 Question Id : 70959710094 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

. An ABC protein is

a. An aquaporin
b. An ATP-powered pump
c. P-type ATPase
d. F-type ATPase

Question Number : 29 Question Id : 70959710095 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In prokaryotes ABC transport proteins serve as

a. Importers of nutrients and other substrate molecules
b. Exporters of drugs and other substrate molecules
c. Act both as importers and exporters of substrate molecules
d. Secondary active transporters

Question Number : 30 Question Id : 70959710096 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The MDR1 protein

a. Confers multi-drug resistance to tumour cells which express high levels of MDR1 Protein

b. Confers antibiotic resistance to bacterial cells

c. Imports drugs like colchicines and vinblastine into the cytosol

d. Both a and b

Question Number : 31 Question Id : 70959710097 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

. A reaction occurs spontaneously if

a. $\Delta G < 0$

b. $\Delta G > 0$

c. $\Delta G = 0$

d. $\Delta G \geq 1$

Question Number : 32 Question Id : 70959710098 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

. In exergonic reactions, the free energy change ΔG

a. has a positive value

b. has a negative value

c. is equal to zero

d. more than zero

Question Number : 33 Question Id : 70959710099 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which statement regarding chemical equilibria is false?

a. At equilibrium, $\Delta G = 0$

b. If $\Delta G^{o\prime}$ is negative and the reaction goes in forward direction

c. $\Delta G^{o\prime}$ is positive and the reaction proceeds in reverse

d. If the equilibrium constant has a large value, ΔG is positive

Question Number : 34 Question Id : 70959710100 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of these chemical reactions is an oxidation-reduction reaction?

a. $Fe + S \rightarrow FeS$

b. $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$

c. $CO_2 + H_2O \rightarrow H_2CO_3$

d. $H_2SO_4 + 2NaOH \rightarrow Na_2SO_4 + 2H_2O$

Question Number : 35 Question Id : 70959710101 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The cell potential, E°, for an oxidation-reduction reaction was found to equal 1.10 V.
What can be said about this reaction?

a. at equilibrium
b. endothermic
c. nonspontaneous
d. spontaneous

Question Number : 36 Question Id : 70959710102 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Reaction by which chemical energy that has been stored in high energy phosphoanhydride bonds in ATP is released is called

a. ATP phosphorylation
b. ATP dehydrogenation
c. ATP hydrolysis
d. ATP hydrogenation

Question Number : 37 Question Id : 70959710103 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The resting membrane potential is around

a. +20mV
b. -20 mV
c. +70 mV
d. -70 MV

Question Number : 38 Question Id : 70959710104 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Enzyme that makes ATP by chemiosmosis is

a. ATP dehydrogenase
b. ATPase
c. ATP synthase
d. Dehydrogenase

Question Number : 39 Question Id : 70959710105 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Chemiosmotic hypothesis was proposed by

a. Peter D. Mitchell
b. Charles Darwin
c. Gregor Mendel
d. Alfred Russell

Question Number : 40 Question Id : 70959710106 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In substrate level phosphorylation

a. The substrate reacts to form a product containing a high energy bond
b. ATP synthesis is linked to dissipation of proton gradient
c. High energy intermediate compounds cannot be isolated
d. Only mitochondrial reactions participate in ATP formation

Question Number : 41 Question Id : 70959710107 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

For each acetyl CoA oxidised by the citric acid cycle, what is the energy output by substrate level phosphorylation?

a. 1 ATP
b. 2 ATP
c. 4 ATP
d. 6 ATP

Question Number : 42 Question Id : 70959710108 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about photosynthesis is correct?

a. Carbohydrates are the source of electrons for photosynthesis
b. CO_2 is the source of electrons in photosynthesis
c. Water is the source of electrons in photosynthesis
d. NADH is the source of electrons in photosynthesis

Question Number : 43 Question Id : 70959710109 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The primary neurotransmitter at the neuromuscular junction is

a. Acetylcholine
b. Dopamine
c. Adrenaline
d. Serotonin

Question Number : 44 Question Id : 70959710110 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Plant uncoupling proteins

a. Transport protons into the mitochondrial matrix dissipating the proton motive force
b. Transports protons out of the mitochondrial matrix creating a proton motive force
c. Promotes electron transfer to O_2 in the alternative respiratory pathway
d. Uncouples TCA cycle from oxidative phosphorylation

Question Number : 45 Question Id : 70959710111 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements about the electron transport chain is NOT correct

a. It is located in the inner mitochondrion membrane
b. Cytochrome c accepts electrons from complex II
c. Cytochrome oxidase (complex IV) accepts electrons from Cytochrome c
d. Complex I is called NADH dehydrogenase

Question Number : 46 Question Id : 70959710112 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following ETC components accept only one electron?

a. Coenzyme Q
b. Cytochrome b
c. FAD
d. FMN

Question Number : 47 Question Id : 70959710113 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The function of an electron in the electron transport chain is

a. To transfer energy from complex II to complex I
b. To pump hydrogen ions using complex II
c. To use its free energy to pump protons against their concentration gradient
d. To combine with phosphate when ATP is synthesized

Question Number : 48 Question Id : 70959710114 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

NADH and NADPH are

a. Pyridine nucleotides
b. Involved in oxidation of fuel molecules
c. Electron acceptors
d. Flavoproteins

Question Number : 49 Question Id : 70959710115 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is capable of donating two electrons?

a. NAD^+
b. NADH
c. $NADP^+$
d. FAD

Question Number : 50 Question Id : 70959710116 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Each NADH that enters the electron transport system produces _____ ATP.

a. 2
b. 3
c. 36
d. 38

Question Number : 51 Question Id : 70959710117 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following chemical reactions represent the reduction of NAD during cellular respiration?

a. $NAD + 2H^+ \rightarrow NADH + H^+$
b. $NAD + 2H^+ + 2e^- \rightarrow NADH_2$
c. $NAD^+ + 2H^+ + 2e^- \rightarrow NADH + H^+$
d. $NAD^+ + 2H^+ + e^- \rightarrow NADH + H^+$

Question Number : 52 Question Id : 70959710118 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is a component of succinate dehydrogenase in the electron transport chain?

a. Niacin
b. FMN
c. FAD
d. Coenzyme Q

Question Number : 53 Question Id : 70959710119 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which electron carrier is involved in anabolic processes?

a. NADPH
b. NADH
c. $FMNH_2$
d. $FADH_2$

Question Number : 54 Question Id : 70959710120 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____is also known as thermogenin

a. UCP1
b. UCP2
c. UCP3
d. UCP4

Question Number : 55 Question Id : 70959710121 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

If oxidative phosphorylation is uncoupled from electron transfer then

a. Energy will be dissipated in the form of heat
b. Decreased ATP yield
c. increased O_2 consumption
d. all of the above

Question Number : 56 Question Id : 70959710122 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

.Which of the following in an inhibitor of Complex I of the mitochondrial electron transport chain?

a. Rotenone
b. CN
c. CO
d. Antimycin A

Question Number : 57 Question Id : 70959710123 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

An inhibitor of Complex II of mitochondrial electron transport chain is

a. TTFA
b. Cyanide
c. Oliomycin
d. 2,4-dinitrophenol

Question Number : 58 Question Id : 70959710124 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements is incorrect?

a. AOX is a non-proton pumping terminal oxidase
b. AOX is present in all members of Kingdom Plantae
c. AOX is present only in thermogenic plants
d. AOX activation occurs in response to mitochondrial stress

Question Number : 59 Question Id : 70959710125 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Themogenic activity in plants during exposure to cold environments is due to

a. UCP activation
b. AOX activity
c. Bypassing ele ctron transfer to proton pumping complexes of the ETC
d. All of the above

Question Number : 60 Question Id : 70959710126 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following is a non-phosphorylating bypass mechanism in the mitochondria?

a. AOX activation
b. Alternate dehydrogenase activity
c. proton transport into the matrix by UCPs
d. all of the above

Question Number : 61 Question Id : 70959710127 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following statements best describes the beta oxidation of fatty acids?

a. One acetyl coA is produced in each turn of the beta oxidation spiral
b. Beta oxidation of fatty acids takes place in the cytosol
c. The intermediates are transported by acyl carrier proteins
d. The enzymes form multienzyme complexes

Question Number : 62 Question Id : 70959710128 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

. What is the role of thiolase in the beta oxidation of fatty acids?

a. Hydration
b. Cleavage of coA
c. Cleavage of the bond between the α and β carbons
d. Generates $FADH_2$

Question Number : 63 Question Id : 70959710129 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How many carbon atoms are removed from fatty acl coA per turn of the beta oxidation?

a. 2
b. 1
c. 3
d. 4

Question Number : 64 Question Id : 70959710130 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In Kreb cycle, a six-carbon compound is formed by the combination of acetyl coA and

a. citrate
b. malate
c. oxaloacetate
d. succinate

Question Number : 65 Question Id : 70959710131 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Citric acid cycle is involved in breakdown of

a. fatty acids
b. carbohydrates
c. proteins
d. all of the above

Question Number : 66 Question Id : 70959710132 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

How many molecules of carbon dioxide are produced per molecule of acetyl coA oxidised in the TCA cycle?

a. 1
b. 2
c. 3
d. 0

Question Number : 67 Question Id : 70959710133 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The dark phase of photosynthesis occurs in

a. grana
b. stroma
c. thylakoids
d. Both (a) and (b)

Question Number : 68 Question Id : 70959710134 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Reduction of $NADP^+$ to NADPH takes place in

a. Cyclic photophosphorylation
b. Noncyclic photophosphorylation
c. Oxidative phosphorylation
d. All of the above

Question Number : 69 Question Id : 70959710135 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In cyclic photophosphorylation, the electron emitted by P_{680} is replaced by electron from

a. Water
b. Cytochrome bf complex
c. Ferridoxin
d. P_{700}

Question Number : 70 Question Id : 70959710136 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In noncyclic photophosphorylation, the ultimate acceptor of electrons that have been produced from the splitting of water is

a. Oxygen
b. Chlorophyll *a*
c. $NADP^+$
d. Carbon dioxide

Question Number : 71 Question Id : 70959710137 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Photosynthetic light reaction takes place

a. In the chloroplasts membranes
b. In the stroma
c. In the thylakoid membranes
d. In the thylakoid space

Question Number : 72 Question Id : 70959710138 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Photophosphorylation in some green and purple bacteria

a. Uses water as electron donor
b. Uses H_2S as electron donor
c. Produces O_2 as a by product
d. Uses two photosystems to generate ATP and NADPH

Question Number : 73 Question Id : 70959710139 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Phototrophic Heliobacteria is –

a. Oxygenic photosynthetic bacteria
b. Anoxygenic photosynthetic bacteria
c. Cyanobacteria
d. None

Question Number : 74 Question Id : 70959710140 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following pigments are present in all photosynthetic plants?

a. Chlorophyll a
b. Chlorophyll b
c. Chlorophyll a and carotenoids
d. Chlorophyll a, b and carotenoids

Question Number : 75 Question Id : 70959710141 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Phycobilins are accessory pigments found in

a. Green plants
b. Blue green algae and red algae
c. Red algae and brown algae
d. All photosynthetic organisms

Question Number : 76 Question Id : 70959710142 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Absorption spectrum of chlorophyll is maximum in _____ light.

a. red
b. blue
c. Yellow
d. blue-violet

Question Number : 77 Question Id : 70959710143 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Presence of carotenes in chloroplasts help in

a. ATP synthesis
b. Transferring radiant energy to chemical energy
c. Protecting chlorophyll molecules from photooxidation
d. Absorption of longer wavelength of light

Question Number : 78 Question Id : 70959710144 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The reaction center chlorophylls in PSI and PSII of cyanobacteria and chloroplasts exhibit light absorption maxima at

a. 680nm and 700nm respectively
b. 600nm and 700nm respectively
c. 700nm and 680nm respectively
d. 600nm and 700nm respectively

Question Number : 79 Question Id : 70959710145 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

_____ connects PSII and PSI

a. Cytochrome *bc*
b. Cytochrome *bf*
c. Ferredoxin
d. Plastocyanin

Question Number : 80 Question Id : 70959710146 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Chlorophyll-a differs from chlorophyll-b in having---

a. Methyl group instead of aldehyde group
b. Aldehyde group instead of methyl group
c. Methyl group instead of ethyl group
d. Only phytol tail instead of head a

Question Number : 81 Question Id : 70959710147 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A proton motive force is generated across the thylakoid membrane owing to

a. Pumping of protons to the stroma by cytochrome bf
b. Removal of electrons by oxidised PSI from H_2O, forming O_2 and protons which remain in the lumen
c. Transfer of electrons to cytochrome bf and release of protons to the lumen by reduced plastoquinone
d. Both b and c

Question Number : 82 Question Id : 70959710148 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The oxidised P700 regain an electron from

a. Cytochrome *bf*
b. Ferredoxin
c. Plastoquinol
d. Plastocyanin

Question Number : 83 Question Id : 70959710149 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Triton X-100 is a/an

a. Ionic detergent
b. Non-ionic detegent
c. Zwitterionic detergent
d. Charged detergent

Question Number : 84 Question Id : 70959710150 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Rate of photosynthesis

a. Is high at low intensity of light
b. High at high intensity of light
c. Is not dependent on light intensity
d. Increases with increasing light intensity but remain constant after a particular point

Question Number : 85 Question Id : 70959710151 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In what form does the product of glycolysis enter the citric acid cycle?

a. Pyruvate
b. Acetyl coA
c. NADH
d. Glucose

Question Number : 86 Question Id : 70959710152 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The photosystem of purple bacteria absorbs light at –

a. 700 nm
b. 870 nm
c. 680 nm
d. 780 nm

Question Number : 87 Question Id : 70959710153 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

$NADP^+$ is converted to NADPH by

a. NADPH dehydrogenase
b. Reduced ferredoxin
c. Ferredoxin-$NADP^+$ Reductase
d. P700

Question Number : 88 Question Id : 70959710154 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Rate of photosynthesis is dependent on

a. CO_2 concentration
b. Temperature
c. Wavelength of light
d. All of the above

Question Number : 89 Question Id : 70959710155 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

According to the first law of thermodynamics

a. Total internal energy of a system remains constant
b. Total energy of a system remains constant
c. Total energy of a system is never constant
d. Work done by a system is equal to heat transferred by the system

Question Number : 90 Question Id : 70959710156 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

A redox reaction with a positive ΔE value indicates that

a. ΔG will be positive and the reaction will proceed spontaneously
b. ΔG will be negative and the reaction will proceed spontaneously
c. ΔG will be positive and the reaction will not proceed spontaneously
d. the reaction will be at equilibrium

Question Number : 91 Question Id : 70959710157 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

When succinate is converted to fumarate in the mitochondria as part of the citric acid cycle; succinate loses two electrons and two protons. These are transferred to

a. FMN
b. FAD
c. NADP
d. NAD^+

Question Number : 92 Question Id : 70959710158 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Hydrolysis of phosphate groups in ATP is an

a. exergonic process
b. endergonic process
c. endothermic process
d. both a and c

Question Number : 93 Question Id : 70959710159 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

The hydrolytic cleavage of the terminal phosphoric acid anhydride (phosphoanhydride) bond in ATP yields

a. -7.3 kJ/mol
b. -30.5 kJ/mol
c. 30.5 kJ/mol
d. 32 kJ/mol

Question Number : 94 Question Id : 70959710160 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following enzymes catalyse substrate level phosphorylation in TCA cycle?

a. Malate dehydrogenase
b. Succinate thiokinase
c. Succinate dehydrogenase
d. Isocitrate dehydrogenase

Question Number : 95 Question Id : 70959710161 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Uncoupling of oxidative phosphorylation from electron transfer leads to

a. dissipation of energy in the form of heat
b. decreased ATP yield
c. increased O_2 consumption
d. all of the above

Question Number : 96 Question Id : 70959710162 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

What is the effect of cyanide on the mitochondrial ETC?

a. it is an inhibitor of Complex I
b. it is an inhibitor of Complex IV
c. inhibits proton pumping by Complex I, III and IV
d. inhibits ATP synthesis by Complex V

Question Number : 97 Question Id : 70959710163 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Beta oxidation of long chain fatty acids occurs primarily in

a. Cytosol
b. Mitochondria
c. Peroxisomes
d. Endoplasmic reticulum

Question Number : 98 Question Id : 70959710164 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In purple and green bacteria there is an involvement of

a. Photosystem I only
b. Photosystem II only
c. Both Photosystem I and II
d. None

Question Number : 99 Question Id : 70959710165 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

In endergonic reactions, the free energy change ΔG

a. has a negative value
b. has a positive value
c. is equal to zero
d. is less than zero

Question Number : 100 Question Id : 70959710166 Question Type : MCQ Option Shuffling : No Display Question Number : Yes Single Line Question Option : No Option Orientation : Vertical

Correct Marks : 1 Wrong Marks : 0

Which of the following components of the Electron transport chain is a mobile carrier of electrons?

a. Complex I
b. Complex II
c. Ubiquinone
d. Cytochrome C