

Bioenergetics is the _____ study of the energy transductions changes of one form of energy into another.

Select the correct option

☐	Qualitative
☐	Both Quantitative and Qualitative
☒	Quantitative
☐	None of given

Click to Save Answer & Move to Next Question

In the equation $\Delta G^\circ = -RT \ln K_{eq}$, R stands for

Select the correct option

☐	Speed constant
☐	Gas constant 
☐	Heat constant
☐	Temperature constant

Thioesters contain a ____ atom in the position occupied by an oxygen

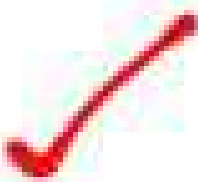
Select the correct option

☐	Calcium
☒	Sulfur
☐	Carbon
☐	Chlorine

Question # 6 of 8 (Start time: 01:18:03 PM, 27 June 2022)

A double arrow in the chemical reaction equation indicates

Select the correct option

☐	Reaction is non-directional
☐	Reaction is unidirectional
☐	Reaction is multidirectional
☐	Reaction is bidirectional 

Question # 2 of 8 (**Start time: 02:11:36 PM, 27 June 2022**)

A double arrow in the chemical reaction equation indicates

Select the correct option

☐	Reaction is unidirectional
☒	Reaction is bidirectional
☐	Reaction is non-directional
☐	Reaction is multidirectional

BIO303:First quiz

Question # 3 of 8 (**Start time: 02:11:45 PM, 27 June 2022**)

_____ is the energy currency of the living cells

Select the correct option

☒	ATP
☐	Amino acid
☐	DNA
☐	mRNA

Question # 4 of 8 (Start time: 02:12:05 PM, 27 June 2022)

All of the following is true about reduction reaction except_____.

Select the correct option



Gain of electrons



Removal of oxygen



Gain of hydrogen



Addition of oxygen

Click to Save Answer & Move to Next

All of the following is true about oxidation reaction except_____.

Select the correct option

☐ Loss of electrons

☐ Addition of oxygen

☐ Loss of hydrogen

☒ Removal of oxygen

The flavin nucleotides FMN and FAD serve as prosthetic groups for the enzymes, called _____ .

Select the correct option



Lipoproteins



Glycoproteins



flavoproteins



Nitroproteins

Question # 5 of 8 (Start time: 02:12:27 PM, 27 June 2022)

Total Marks

Which of the following compounds have large free energy change?

Select the correct option



Phosphorylated compounds



Carbonated compounds



Organic compounds



Nitrogenous compounds

Click to Save Answer & Move to Next Question

A molecular bond is also called as _____ bond.

Select the correct option



Peptide



Covalent



Ionic



Hydrogen

Click to Save Answer & Move to Next Question



Question # 1 of 8 (Start time: 04:39:59 PM, 25 June 2022)

Which kind of reactions are central feature of metabolism?

Select the correct option

☒	Oxidation-reduction reactions 
☐	Displacement reaction.
☐	Decomposition reactions.
☐	Double Displacement reaction.

The unit of reduction potential is_____ .

Select the correct option



Kelvin



Ampere



Candela



Volt

Click to Save Answer & Move to Next Question :



BC190400504: MARYAM

Time Left 85 sec(s)

BIO303: First quiz

Quiz Start Time: 04:21 PM, 26 June 2022

Question # 3 of 8 (Start time: 04:23:23 PM, 26 June 2022)

Total Marks: 1

Which one of the following enzymes catalyze the conversion of glucose 6-phosphate to fructose 6-phosphate?

Select the correct option

- | | |
|-----------------------|-----------------------------------|
| ☐ | Phosphofructokinase |
| ☐ | Pyruvate kinase |
| ☐ | Phosphoenolpyruvate carboxykinase |
| ☐ | Phosphohexose isomerase |

Quick to Save Answer & Move to Next Question



Question # 1 of 8 (Start time: 04:31:52 PM, 26 June 2022)

The expression for standard free energy change is

Select the correct option



$$\Delta T^0$$



$$\Delta G$$



$$\Delta G^0$$



$$\Delta H^0$$

The unit of reduction potential is_____ .

Select the correct option



Kelvin



Ampere



Candela



Volt



Question # 3 of 8 (Start time: 04:11:46 PM, 26 June 2022)

The loss of ____ from an alcohol results in the introduction of a C-C bond between two adjacent carbon atoms.

Select the correct option

☐	H+
☐	ATP
☒	H ₂ O
☐	OH-



Question # 4 of 8 (Start time: 04:12:57 PM, 26 June 2022)

The composition of a reacting system tends to continue changing until

Select the correct option

- | | |
|----------------------------------|----------------------------------|
| ☒ | Reaction attains equilibrium
 |
| ☐ | Reaction attains maximum speed |
| ☐ | Reaction becomes very slow |
| ☐ | Reactants are finished |

BIO303:First quiz

Question # 8 of 8 (Start time: 07:36:49 PM, 26 June 2022)

In biological system, a few types of _____ serve as Universal Electron Carriers.

Select the correct option

☐	Enzymes and coenzymes
☒	Coenzymes and Proteins
☐	None of given
☐	Enzymes and hormones

BIO303:First quiz

Question # 1 of 8 (Start time: 07:32:04 PM, 26 June 2022)

If the K_{eq} is equal to 1.0 then the standard free-energy change (ΔG°) of that reaction is _____.

Select the correct option

- | | |
|----------------------------------|-----|
| ☐ | 0.7 |
| ☐ | 1 |
| ☒ | 0.0 |
| ☐ | 0.1 |

Question # 5 of 8 (Start time: 07:35:07 PM, 26 June 2022)

Which kind of reactions are central feature of metabolism?

Select the correct option

☐	Double Displacement reaction.
☐	Displacement reaction.
☐	Decomposition reactions
☐	Oxidation-reduction reactions



BIO303:First quiz

Question # 3 of 8 (Start time: 07:34:04 PM, 26 June 2022)

In phosphocreatine hydrolysis, the release of P_i and the resonance stabilization of creatine favor ____

Select the correct option

☐	Reverse reaction
☐	No reaction
☒	Forward reaction
☐	End of reaction

Question # 3 of 8 (Start time: 03:45:31 PM, 26 June 2022)

_____ -form of pyruvate can immediately tautomerize to the more stable keto-form of pyruvate

Select the correct option

☐	Chloride
☐	Keto
☐	Glucose
☐	Enol 

Question # 4 of 8 (Start time: 07:34:31 PM, 26

Kinases catalyzes the transfer of ____ group.

Select the correct option

☐	Acyl
☐	Hydroxyl
☐	Carbonyl
☐	Phosphoryl ✓



Question # 2 of 8 (Start time: 03:44:21 PM, 26 June 2022)

The composition of a reacting system tends to continue changing until

Select the correct option

☐	Reactants are finished
☐	Reaction attains maximum speed
☒	Reaction attains equilibrium
☐	Reaction becomes very slow

Which one of the following is derived by the reaction between a carboxylic acid and an alcohol?

Select the correct option

☐

Phenol

☐

Ester

☐

Aldol

☐

Enol

Question # 4 of 8 (Start time: 03:46:36 PM, 26 June 2022)

Most biochemical reactions occur near pH _____.

Select the correct option



7



5-6



8



6

[Click to Save Answer & Move](#)

Most biochemical reactions occur near pH

Select the correct option

☐	10
☐	14
☒	7 
☐	0

Question # 3 of 5 (Start time: 11:41:24 AM, 27 June 2022)

Total Marks: 1

ATP hydrolysis is catalyzed by ATP-dependent enzyme _____.

Select the correct option

☐glutamine synthetase ☐

ATP hydroxylase

☐

glutamine hydroxylase

☐

ATP synthetase

[Click to Save Answer & Move to Next Question](#)

Kinases catalyzes the transfer of ____ group.

Select the correct option

☐

Carbonyl

☐

Acyl

☐

Hydroxyl

☐

Phosphoryl



Click to Save Answer & Move to Next Question

Study of energy relationships and energy conversions in biological systems is termed as_____.

Select the correct option

☐ Biotechnology

☐ microbiology

☒ Bioenergetics

☐ Biophysics

Click to Save Answer & Move to Next Question

Question # 6 of 8 (Start time: 11:45:28 AM, 27 June 2022)

Total Marks: 1

The process in which the enolate of an aldehyde or a ketone reacts at the α -carbon with the carbonyl of another molecule to obtain β -hydroxy aldehyde or β -hydroxy ketone, is called as _____.

Select the correct option

☐	Decarboxylation
☐	Claisen condensation
☐	Hydrolysis
☐	Aldol condensation



Click to Save Answer & Move to Next Question

The stable balance of attractive and repulsive forces between atoms, when they share electrons, is known as _____ bonding.

Select the correct option



Hydrogen



Covalent



Peptide



Ionic

[Click to Save Answer & Move to Next Question](#)

Question # 1 of 8 (Start time: 12:01:58 PM, 27 June 2022)

Total Marks: 1

An endergonic reaction_____.

Select the correct option



Releases energy



All of given



Releases enzymes



Requires energy

Click to Save Answer & Move to Next Question

The stable balance of attractive and repulsive forces between atoms, when they share electrons, is known as _____ bonding.

Select the correct option



Hydrogen



Ionic



Peptide



Covalent

Click to Save Answer & Move to Next Question

Which one of the following enzymes catalyze the conversion of glucose 6-phosphate to fructose 6-phosphate?

Select the correct option



Phosphohexose isomerase



Phosphoenolpyruvate carboxykinase



Phosphofructokinase



Pyruvate kinase

Question # 3 of 8 (Start time: 12:10:09 PM, 27 June 2022)

During the activation of fatty acids, the _____ group of coenzyme A displaces the adenylyl group and forms a thioester with the fatty acid.

Select the correct option

- | | |
|----------------------------------|----------|
| ☒ | Thiol |
| ☐ | Carboxy |
| ☐ | Aldehyde |
| ☐ | Ketone |

Which kind of reactions are central feature of metabolism?

Select the correct option

- ☐ Displacement reaction.
- ☒ Oxidation-reduction reactions
- ☐ Decomposition reactions
- ☐ Double Displacement reaction.

Click to Save Answer & Move to Next Question

Question # 8 of 8 (Start time: 12:14:39 PM, 27 June 2022)

Which one of the following enzymes catalyze the conversion of glucose 6-phosphate to fructose 6-phosphate?

Select the correct option

☐	Phosphohexose isomerase
☐	Pyruvate kinase
☐	Phosphofructokinase
☐	Phosphoenolpyruvate carboxykinase

At standard biochemical state, the concentration of water is

Select the correct option

☐	5.5M
☐	100M
☐	55.5M ✓
☐	71.5M



Question # 2 of 8 (Start time: 12:41:54 PM, 27 June 2022)

Kinases catalyzes the transfer of ____ group.

Select the correct option



Carbonyl



Acyl



Hydroxyl



Phosphoryl

[Click to Save Answer](#)

Question # 4 of 8 (Start time: 12:11:17 PM, 27 June 2022)

In a chemical reaction, if the product of the concentration of reactants is greater than product, the reaction will

Select the correct option

- | | |
|----------------------------------|------------------------------|
| ☒ | Proceed in forward direction |
| ☐ | Reaction will stop |
| ☐ | Proceed in reverse direction |
| ☐ | Reaction will become slow |



Bioenergetics is the study of

Select the correct option



Water transduction



Energy transduction



Signal transduction



Electric transduction

At standard biochemical state, the concentration of water is

Select the correct option

☐	5.5M
☒	55.5M ✓
☐	100M
☐	71.5M



Question # 3 of 8 (Start time: 12:42:10 PM, 27 June 2022)

The Carbon of a carbonyl group has

Select the correct option

☒	A partial positive charge
☐	None
☐	Parital negative charge
☐	is neutral



Question # 4 of 8 (Start time: 12:42:32 PM, 27 June 2022)

All of the following is true about oxidation reaction except____

Select the correct option

- | | |
|----------------------------------|--------------------|
| ☐ | Loss of hydrogen |
| ☐ | Addition of oxygen |
| ☐ | Loss of electrons |
| ☒ | Removal of oxygen |

[Click to Save Answer & Move to](#)



Question # 1 of 8 (Start time: 12:41:48 PM, 27 June 2022)

A molecular bond is also called as _____ bond.

Select the correct option



Ionic



Covalent



Hydrogen



Peptide

Click to Save Answer



_____ of the three P atoms of ATP molecule can serve as the electrophilic target for nucleophilic attack.

Select the correct option



Gamma



All of given



Alpha



Beta

Click to Save Answer & Move to Next Question



Quiz

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Question # 7 of 8 (Start time: 12:44:06 PM, 27 June 2022)

Total M

A carbon-carbon bond forming reaction that occurs between two esters or one ester and another carbonyl compound in the presence of a strong base resulting in a β -keto ester, is named as ____.

Select the correct option



Hydrolysis



Aldol condensation



Claisen condensation



Decarboxylation

[Click to Save Answer & Move to Next Question](#)



Question # 8 of 8 (Start time: 12:44:44 PM, 27 June 2022)

Electrophiles are capable of

Select the correct option

☐	Accepting both electrons and protons
☒	Accepting electrons
☐	Accepting protons
☐	Donating electrons

Question # 6 of 8 (Start time: 12:12:38 PM, 27 June 2022)

If the K_{eq} is equal to 1.0 then the standard free-energy change (ΔG°) of that reaction is _____

Select the correct option

☐	1
☐	0.7
☐	0.1
☒	0.0

Question # 5 of 8 (Start time: 12:11:54 PM, 27 June 2022)

The flavin nucleotides FMN and FAD serve as prosthetic groups for the enzymes, called _____

Select the correct option



flavoproteins



Nitroproteins



Glycoproteins

Lipoproteins

Dietary deficiency of Niacin the vitamin form of NAD and NADP, causes_____.

Select the correct option



None of given



Arthritis



Diabetes



Pellagra



Question # 8 of 8 (Start time: 12:07:25 PM, 27 June 2022)

Total Marks: 1

Cells work at _____ temperature.

Select the correct option

☐

Variable

☒

Constant ✓

☐

High

☐

Low

Click or Save Answer & Move to Next Question

Question # 7 of 8 (Start time: 12:13:47 PM, 27 June 2022)

All of the following is true about reduction reaction except _____

Select the correct option

☐	Gain of electrons
☐	Addition of oxygen ✓
☐	Gain of hydrogen
☐	Removal of oxygen

Question # 2 of 8 (Start time: 12:09:14 PM, 27 June 2022)

Functional groups capable of accepting electrons are known as _____

Select the correct option

☐	All of given
☐	Neutrophiles
☒	Electrophiles ✓
☐	Nucleophiles

Chymotrypsin reaction involves the transfer of ____ group.

Select the correct option

- ☐ Carbonyl
- ☐ Phosphoryl
- ☒ Acyl 
- ☐ Hydroxyl

Question # 4 of 8 (Start time: 12:03:26 PM, 27 June 2022)

Total Marks: 1

The process in which the enolate of an aldehyde or a ketone reacts at the α -carbon with the carbonyl of another molecule to obtain β -hydroxy aldehyde or β -hydroxy

Select the correct option



Aldol condensation



Decarboxylation



Claisen condensation



Hydrolysis

Click to Save Answer & Move to Next Question

Question # 5 of 8 (Start time: 12:04:12 PM, 27 June 2022)

At standard biochemical state, the concentration of water is

Select the correct option

☐	5.5M
☐	71.5M
☐	55.5M ✓
☐	100M

BI0303:First quiz

Question # 8 of 8 (Start time: 12:04:41 PM, 27 June 2022)

The free energy change of ATP hydrolysis is

Select the correct option

☐	Positive
☒	Negative ✓
☐	Neutral
☐	None

Question # 3 of 8 | Start time: 11:59:10 AM, 27 June 2022

The expression for standard free energy change is

Select the correct option

☐	ΔT^0
☐	ΔG
☒	ΔG^0 ✓
☐	ΔH^0

The process in which the enolate of an aldehyde or a ketone reacts at the α -carbon with the carbonyl of another molecule to obtain β -hydroxy aldehyde or β -hydroxy ketone, is called as _____.

Select the correct option



Hydrolysis



Claisen condensation



Decarboxylation



Aldol condensation



Click to Save Answer & Move to Next Question

High-energy' compounds have a ΔG^0 of hydrolysis more negative than _____ kJ/mol.

Select the correct option

☐	-10
☐	-15
☒	-25 ✓
☐	-20

Which one of the following groups is an α , β -unsaturated carbonyl?

Select the correct option

☐ Acryloyl

☒ Acyl

X

☐ Enone

✓

☐ Phosphoryl

ATP hydrolysis is catalyzed by ATP-dependent enzyme

_____.

Select the correct option

☐ ATP hydroxylase

☐ ATP synthetase

☒ glutamine synthetase

☐ glutamine hydroxylase

[Click to Save Answer & Move to Next Question](#)

Question # 1 of 9 (Start time: 11:56:48 AM, 27 June 2022)

Electrophiles are capable of

Select the correct option

☒	Accepting electrons
☐	Accepting both electrons and protons
☐	Accepting protons
☐	Donating electrons

A chemical bond which involves the sharing of electron pairs between atoms is called

Select the correct option

☐	Coordinate bond
☒	Covalent bond ✓
☐	Physical bond
☐	ionic bond

Which one of the following is derived by the reaction between a carboxylic acid and an alcohol?

Select the correct option:

☐

Aldol

☒

Ester

☐

Phenol

☐

Enol

Click to Save Answer & Move to Next Question

During the activation of a fatty acid, both phosphoanhydride bonds of _____ are broken.

Select the correct option

☐

Fatty acid

☒

ATP

☐

Thiol group

☐

Triglyceride

Question # 8 of 8 (Start time: 11:48:05 AM, 27 June 2022)

Total Marks: 1

Which one of the following reactions involves the formation of a carbanion stabilized by a carbonyl group?

Select the correct option

☐

Claisen condensation

☐

Hydrolysis

☐

Aldol condensation

☐

Decarboxylation

[Click to Save Answer & Move to Next Question](#)

Question # 5 of 8 (Start time: 11:44:06 AM, 27 June 2022)

Total Marks: 1

An endergonic reaction_____.

Select the correct option

☐

Releases enzymes

☒

Requires energy

☐

All of given

☐

Releases energy

[Click to Save Answer & Move to Next Question](#)

Which one of the following enzymes catalyze the conversion of glucose 6-phosphate to fructose 6-phosphate?

Select the correct option

☐

Phosphofructokinase

☐

Pyruvate kinase

☐

Phosphoenolpyruvate carboxykinase

☐

Phosphohexose isomerase



Click to Save Answer & Move to Next Question

Hydrolysis of a-b phosphoanhydride bond of ATP molecule generate energy equal to_____ kJ/mol.

Select the correct option



23



186



93



46



The process in which the enolate of an aldehyde or a ketone reacts at the α -carbon with the carbonyl of another molecule to obtain β -hydroxy aldehyde or β -hydroxy ketone, is called as ____.

Select the correct option

- | | |
|----------------------------------|----------------------|
| ☐ | Hydrolysis |
| ☒ | Aldol condensation |
| ☐ | Decarboxylation |
| ☐ | Claisen condensation |

Electrophiles are capable of

Select the correct option

☒	Accepting electrons
☐	Donating electrons
☐	Accepting protons
☐	Accepting both electrons and protons



Quiz

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•Thioesters contain a ____ atom in the position occupied by an oxygen

Select the correct option



Calcium



Carbon



Sulfur



Chlorine

BIO303:First quiz

Question # 2 of 8 (Start time: 07:32:55 PM, 26 June 2022)

Study of energy relationships and energy conversions in biological systems is termed as _____

Select the correct option

☐	Biotechnology
☐	microbiology
☒	Bioenergetics
☐	Biophysics



Question # 6 of 8 (Start time: 07:35:37 PM, 26 June 2022

An endergonic reaction_____

Select the correct option

☐	Releases enzymes
☐	Releases energy
☐	All of given
☐	Requires energy ✓

BIO303:First quiz

Question # 7 of 8 (Start time: 07:36:08 PM, 26 June 2022)

Which one of the following is a hydroxy ketone or aldehyde?

Select the correct option

☐	Ester
☐	Enol
☐	Phenol
☐	Aldol



BIO303:First quiz

Question # 2 of 8 (Start time: 04:10:34 PM, 20 June 2022)

The heat content of the reacting system is known as _____.

Select the correct option

☒	Enthalpy 
☐	Dissociation constant
☐	Equilibrium Constant
☐	Entropy