Talaros Foundations in Microbiology 12th edition Chess Test Bank

SKU: 9781265739362-TEST-BANK

TBEXAM.COM

Talaros Foundations in Microbiology Edition 12 by Chess

CORRECT ANSWERS ARE LOCATED IN THE 2ND HALF OF THIS DOC.

TRUE/FALSE - Write 'T' if the statement is true and 'F' if the statement is false.

1) A covalent bond is formed between an anion and a cation.
   - ◎ true
   - ◎ false

2) Electrons that participate in chemical bonding are typically located closest to the nucleus.
   - ◎ true
   - ◎ false

3) Only charged atoms can form ionic bonds.
   - ◎ true
   - ◎ false

4) Water molecules are nonpolar molecules.
   - ◎ true
   - ◎ false

5) Polar molecules have more reactivity compared to nonpolar molecules.
   - ◎ true
   - ◎ false

TBEXAM.COM

6) Elements have unique chemical properties.
   - ◎ true
   - ◎ false

7) The concentration of a solution expresses the amount of solvent present.
   - ◎ true
   - ◎ false

8) If solution A has a lower pH compared to solution B, then solution A is more acidic than solution B.
   - ◎ true
   - ◎ false

9) The only part of an amino acid that differs from other amino acids is its R group.
   - ◎ true
   - ◎ false

TBEXAM.COM

TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

10) All proteins are enzymes.
- ◎ true
- ◎ false

11) Replication is the cellular process that copies the DNA prior to cell division.
- ◎ true
- ◎ false

12) Nucleic acids have primary, secondary, tertiary, and quaternary levels of organization.
- ◎ true
- ◎ false

13) Neutrally charged subatomic particles are called neutrons.
- ◎ true
- ◎ false

14) The combinations of subatomic particles are called atoms.
- ◎ true
- ◎ false

15) An atom that receives additional electrons is called the oxidizing agent.
- ◎ true
- ◎ false

16) The permanent breakage of molecules to release products are decomposition reactions.
- ◎ true
- ◎ false

17) The solvent is the substance that will be dissolved in the solution.
- ◎ true
- ◎ false

18) Cellular membranes that show both hydrophilic and hydrophobic properties are called amphipathic.
- ◎ true
- ◎ false

19) Alkaline is another term that is interchangeable with basic.
- ◎ true
- ◎ false

TBEXAM.COM

TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

20) Carbonyl groups are found in lipids.

- ◎ true
- ◎ false

CHECK ALL THE APPLY. Choose all options that best completes the statement or answers the question.

21) Which elements are found in all carbohydrates, lipids, proteins, and nucleic acids?

- A) Nitrogen
- B) Carbon
- C) Hydrogen
- D) Oxygen
- E) Phosphorus
- F) Sulfur

22) Which elements are NOT critical to the life of any organism found on Earth?

- A) Arsenic (As)
- B) Uranium (U)
- C) Cobalt (Co)
- D) Copper (Cu)
- E) Manganese (Mn)
- F) Hydrogen (H)

TBEXAM.COM

TBEXAM.COM

MULTIPLE CHOICE - Choose the one alternative that best completes the statement or answers the question.

23) Anything that occupies space and has mass is called

- A) an electron.
- B) living.
- C) matter.
- D) energy.
- E) space.

24) All of the following pertain to $^{14}_{6}C$ *except* it

- A) has 6 protons.
- B) has 6 electrons.
- C) has 14 neutrons.
- D) is an isotope of carbon.
- E) has a mass number of 14.

TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

TBEXAM.COM

Talaros Foundations in Microbiology Edition 12 by Chess

25) The electrons of an atom are
A) always equal in number to the number of neutrons in an atom.
B) found in the nucleus.
C) used to determine atomic number.
D) positively charged.
E) consistently moving in pathways called orbitals.

26) The subatomic particles that orbit the nucleus are the
A) electrons.
B) protons.
C) neutrons.
D) protons and neutrons.
E) protons and electrons.

27) What is the maximum number of electrons in the second energy shell of an atom?
A) 2
B) 4
C) 8
D) 18
E) 32

TBEXAM.COM

28) Isotopes are atoms of the same element that differ in their
A) neutron number.
B) electron number.
C) proton number.
D) atomic number.
E) chemical properties.

29) Two or more atoms bonded together are called a/an
A) ion.
B) isotope.
C) element.
D) electrolyte.
E) molecule.

TBEXAM.COM

TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

30) What would be the valence number of electrons in the sulfur atom $^{32}_{16}S$?
- A) 2
- B) 6
- C) 8
- D) 16
- E) 32

31) Polar molecules are composed of covalently-bonded
- A) identical atoms.
- B) carbon atoms.
- C) ions.
- D) atoms of different electronegativity.
- E) atoms of identical electronegativity.

32) Which term describes reactions that involve the removal of an electron?
- A) Oxidation
- B) Reduction
- C) Dehydration
- D) Decomposition
- E) Dissolution

TBEXAM.COM

33) Which of the following represents a synthesis reaction?
- A) AB → A + B
- B) A + B → AB
- C) AB + XY → AX + BY
- D) AB + XY ↔ AX + BY

34) The important solvent associated with natural systems is
- A) carbon dioxide.
- B) sodium chloride.
- C) ethyl alcohol.
- D) benzene.
- E) water.

TBEXAM.COM

TBEXAM.COM – THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

35) What do H_2O, NaCl, CO_2, and HCl all have in common?
A) All are salts
B) All are acids
C) All are gases
D) All are inorganic
E) All are solutes

36) Which term does *not* belong in this list?
A) Lactic acid
B) Vinegar
C) Hydrogen ion donor
D) pH 8
E) Acidic

37) Compared to a solution of pH 9, a solution of pH 7
A) is more basic.
B) has no OH^- ions.
C) has more H^+ ions.
D) has a higher pH.
E) All of these choices are correct.

TBEXAM.COM

38) The building blocks of an enzyme are
A) nucleotides.
B) glycerol and fatty acids.
C) monosaccharides.
D) phosphate, glycerol, fatty acids.
E) amino acids.

39) Which of the following functional groups is *mismatched* to the organic compound?
A) Phosphate – carbohydrates
B) Sulfhydryl – proteins
C) Amino – proteins
D) Hydroxyl – alcohols
E) Carboxyl – fatty acids

TBEXAM.COM

TBEXAM.COM – THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

40) All of the following are monosaccharides *except*
A) glucose.
B) glycogen.
C) fructose.
D) ribose.
E) deoxyribose.

41) All of the following are lipids *except*
A) cholesterol.
B) starch.
C) phospholipid.
D) wax.
E) triglyceride.

42) A monosaccharide with 5 carbon atoms will have
A) 10 hydrogen atoms and 5 oxygen atoms.
B) 5 hydrogen atoms and 10 oxygen atoms.
C) 5 hydrogen atoms and 5 oxygen atoms.
D) 10 hydrogen atoms and 10 oxygen atoms.
E) 2 hydrogen atoms and 1 oxygen atom.

TBEXAM.COM

43) One nucleotide contains
A) one phosphate.
B) one pentose sugar.
C) one nitrogenous base.
D) All of these choices are correct.

44) Which of the following would have glycosidic bonds?
A) Triglycerides
B) Monosaccharides
C) Polypeptides
D) Polysaccharides
E) ATP

45) All of the following are polysaccharides, *except*
A) dextran in some bacterial slime layers.
B) agar used to make solid culture media.
C) a cell's glycocalyx.
D) cellulose in certain cell walls.
E) prostaglandins in inflammation.

TBEXAM.COM

TBEXAM.COM – THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

46) The hydrophobic tails of a phospholipid are composed of
A) fatty acids.
B) glycerol.
C) phosphate.
D) alcohol.
E) All of these choices are correct.

47) Which of the following is found in DNA but *not* in RNA?
A) Ribose
B) Adenine
C) Thymine
D) Uracil
E) Nucleotides

48) An amino acid contains all of the following *except*
A) an amino group.
B) a carboxyl group.
C) a variable R group.
D) a carbon atom.
E) a nitrogenous base.

TBEXAM.COM

49) ATP is best described as
A) an enzyme.
B) a double helix.
C) an electron carrier.
D) the energy molecule of cells.
E) All of these choices are correct.

50) Which amino acid contains sulfur atoms that form covalent disulfide bonds and stabilize the tertiary structure of some proteins?
A) Valine
B) Cysteine
C) Serine
D) Alanine
E) Tyrosine

TBEXAM.COM

TBEXAM.COM – THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

51) The nucleic acid that delivers the correct amino acid to the ribosome for protein synthesis is
A) rRNA.
B) DNA.
C) tRNA.
D) mRNA.
E) ATP.

52) Which is *not* true about enzymes?
A) Enzymes are found in all cells.
B) Enzymes are catalysts.
C) Enzymes catalyze the cell's chemical reactions.
D) Enzymes can be denatured by heat and other agents.
E) Enzymes have high-energy bonds between phosphates.

53) The weak, attractive force between water molecules is due to
A) hydrogen bonds.
B) covalent bonds.
C) ionic bonds.
D) peptide bonds.
E) glycosidic bonds.

TBEXAM.COM

54) The purine bases in nucleic acids include
A) thymine and cytosine.
B) guanine and adenine.
C) cytosine and guanine.
D) adenine and thymine.
E) ribose and deoxyribose.

55) A student forgot to label a beaker containing a DNA solution and a beaker containing a glucose solution. If chemical analysis was performed to identify the contents of each beaker, which of the following would be found in the beaker of DNA but *not* in the beaker with glucose?
A) Amino acids
B) Hydrogen and oxygen atoms
C) Nitrogen and phosphorus
D) Fatty acids
E) Carbon atoms

TBEXAM.COM

TBEXAM.COM – THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

56) Which component of an atom is equal to the atomic number?
- A) Neutrons
- B) Protons
- C) Protons plus electrons
- D) Neutrons plus protons

57) $C_6H_{12}O_6 + C_6H_{12}O_6 \rightarrow C_{12}H_{22}O_{11} + H_2O$ is an example of
- A) formation of a peptide bond.
- B) a decomposition reaction.
- C) denaturation.
- D) a hydrolytic reaction.
- E) dehydration synthesis.

58) If carbon has an atomic number of 6 and an atomic mass of 14, how many neutrons does it have?
- A) 6
- B) 7
- C) 8
- D) 14
- E) There is not enough information to determine this.

TBEXAM.COM

59) The neutrons of an atom are
- A) always equal to the number of protons in an atom.
- B) found in the nucleus.
- C) used to determine atomic number.
- D) positively charged.
- E) moving in pathways called orbitals.

60) Which of the following represents an exchange reaction?
- A) AB → A + B
- B) A + B → AB
- C) X + Y → XYD
- D) AB + XY ↔ AX + BY

TBEXAM.COM

TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

TBEXAM.COM

Talaros Foundations in Microbiology Edition 12 by Chess

61) A student needs to prepare one liter of a 4% NaCl solution. How much NaCl should they weigh out?
A) 0.4 grams
B) 4.0 grams
C) 40 grams
D) 400 grams

62) How many times more acidic is a solution with a pH of 3 than a solution with a pH of 6?
A) 3
B) 10
C) 1000
D) 36
E) 63

63) Which of the following carbohydrates is found in dairy products?
A) Lactose
B) Sucrose
C) Maltose
D) Glucose
E) Fructose

TBEXAM.COM

64) Which of the following is the stored form of carbohydrates in animals?
A) Glycogen
B) Maltose
C) Starch
D) Cellulose
E) Galactose

65) All of the following are correct about triglycerides, *except*
A) triglycerides are insoluble in water.
B) triglycerides are a concentrated source of energy.
C) unsaturated triglycerides are solid at room temperature.
D) triglycerides dissolve in nonpolar solvents.
E) triglycerides are hydrolyzed by lipases.

66) Which of the following functional groups participate in the formation of an ester bond?
A) Hydroxyl group and amino group
B) Carboxyl group and amino group
C) Hydroxyl group and carboxyl group
D) Hydroxyl group and carbonyl group

TBEXAM.COM

TBEXAM.COM – THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

67) Which type of chemical reaction forms an ester bond in a triglyceride?
A) Dehydration synthesis
B) Oxidation
C) Hydrolysis
D) Reduction

68) The type of chemical bond linking amino acids together is a/an
A) glycosidic bond.
B) peptide bond.
C) ester bond.
D) ionic bond.
E) hydrogen bond.

69) The alpha helix and beta pleated sheet are examples of
A) primary structure.
B) secondary structure.
C) tertiary structure.
D) quaternary structure.
E) gamma structure.

70) Which class of bond links polynucleotide strands of DNA along their length between the bases?
A) Covalent
B) Ionic
C) Van der Waals
D) Double
E) Hydrogen

71) Which of the following is/are hydrophilic?
A) Glucose
B) Vegetable oil
C) Butter
D) Cholesterol
E) All of these choices are correct.

72) Water, glucose, and carbon dioxide are examples of
A) compounds.
B) atoms.
C) gases.
D) macromolecules.

TBEXAM.COM

TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

73) Chemical analysis of an unidentified compound isolated from cells showed the presence of carbon, hydrogen, oxygen, nitrogen, and sulfur. This unknown compound is most likely a
A) carbohydrate.
B) nucleic acid.
C) lipid.
D) protein.

74) Select the incorrect statement.
A) Molecules contain atoms.
B) Compounds may contain only one type of atom.
C) Compounds contain molecules.
D) Atoms are joined by chemical bonds forming molecules.
E) Molecules may contain two of the same type of atom.

75) During cellular reactions, electrons may be removed from compounds such as glucose and picked up by a coenzyme known as NAD^+. When NAD^+ gains these electrons, it is said to be
A) oxidized.
B) reduced.
C) synthesized.
D) dehydrated.

TBEXAM.COM

76) What is the smallest particle that cannot be divided into smaller subunits through ordinary chemical means?
A) Atom
B) Element
C) Molecule
D) Ion
E) Compound

77) The position of an electron at any on time is dictated by its
A) charge.
B) energy shell.
C) atomic position.
D) nucleus position.

78) Equal sharing of electrons during covalent bonding involves_____ molecules.
A) nonpolar
B) polar
C) electrolyte
D) ion

TBEXAM.COM

Talaros Foundations in Microbiology 12th edition Chess Test Bank
TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES

Talaros Foundations in Microbiology Edition 12 by Chess

79) Dissolving substances such as salt in water that release ions are termed
A) polar.
B) nonpolar.
C) electrolytes.
D) solvents.

80) Weak structurally important molecular interactions that are similar to but weaker than hydrogen bonds are called
A) ionic bonds.
B) van der Waals forces.
C) charged bonds.
D) covalent bonds.

81) Which of the following is not one of the four of the main chemical families found within of living things?
A) Lipids
B) Ribosomes
C) Nucleic acids
D) Proteins

TBEXAM.COM

82) Cations are
A) charged subatomic particles.
B) atoms that have gained electrons.
C) radioactive isotopes.
D) capable of forming ionic bonds with anions.
E) atoms without protons.

83) Which of the following statements about functional groups is FALSE?
A) A functional group's chemical properties will vary depending on the associated carbon skeleton's structure.
B) The type of functional groups associated with a molecule contribute to how that molecule is classified.
C) Functional groups confer specific physical and chemical properties to the overall molecule.
D) By identifying which functional groups a molecule contains, a researcher can predict the type of reactions it will most likely undergo.
E) None of these choices are false.

TBEXAM.COM

Talaros Foundations in Microbiology 12th edition Chess Test Bank
TBEXAM.COM – THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES

Talaros Foundations in Microbiology Edition 12 by Chess

84) Which functional group would be LEAST likely to alter the pH of the surrounding environment?
A) R-C=O (carbonyl)
B) R-COOH (carboxyl)
C) $R\text{-}PH_2O_4$(phosphate)
D) R-SH (sulfhydryl)
E) R-OH (hydroxyl)

85) Which functional group is generally not associated with proteins?
A) Carboxyl
B) Hydroxyl
C) Ester
D) Sulfhydrl
E) Amino

86) Which two compounds undergo the formation of an ester bond during the synthesis of triglycerides?
A) Glycerol + fatty acid
B) Glucose + ester
C) Glycogen + hydrocarbon chain
D) Cholesterol + glycerol

TBEXAM.COM

TBEXAM.COM

FILL IN THE BLANK. Write the word or phrase that best completes each statement or answers the question.

87) The total number of protons and neutrons of an element establishes its_____ number.

88) Atoms that gain or lose electrons become charged particles called_____.

89) Protons and neutrons make up the atom's central core referred to as its_____.

90) Organic chemicals always have a basic framework of the element_____ bonded to other atoms.

91) _____ bonds are formed by dehydration synthesis between adjacent amino acids.

92) Purines and pyrimidines are components in the building block units of all_____.

93) During protein synthesis, genes in DNA are copied, making_____ RNA.

94) An ion that contains more protons than electrons is considered a_____.

TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

95) The contents of a reaction are termed a/an_____.

96) A glucose molecule is attracted to the water group on another molecule; therefore, glucose is a_____ molecule.

97) The amine group on a protein is attracted by a water molecule; therefore, the amine group is_____.

98) A fat is called_____ if all carbons of the fatty acid chain are single bonded to 2 other carbons and 2 hydrogens.

99) _____ can be used to trace the position of key atoms that are utilized for diagnosis and treatment.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

100) Certain antibiotics are effective against bacteria that cause human infections because they target prokaryotic ribosomes. Discuss, in detail, how the drug attacking a pathogen's ribosomes will affect the cell. Discuss at least three specific detrimental results.

TBEXAM.COM

TBEXAM.COM

TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

TBEXAM.COM

Talaros Foundations in Microbiology Edition 12 by Chess

Answer Key

Test name: Chapter 02

1) FALSE
2) FALSE
3) TRUE
4) FALSE
5) TRUE
6) TRUE
7) FALSE
8) TRUE
9) TRUE
10) FALSE
11) TRUE
12) FALSE
13) TRUE
14) TRUE
15) TRUE
16) TRUE
17) FALSE
18) TRUE
19) TRUE
20) FALSE
21) [B, C, D]
22) [A, B]
23) C
24) C
25) E
26) A
27) C
28) A
29) E
30) B
31) D
32) A
33) B
34) E
35) D
36) D
37) C

TBEXAM.COM

TBEXAM.COM

TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

TBEXAM.COM

38) E
39) A
40) B
41) B
42) A
43) D
44) D
45) E
46) A
47) C
48) E
49) D
50) B
51) C
52) E
53) A
54) B
55) C
56) B
57) E
58) C
59) B
60) D
61) C
62) C
63) A
64) A
65) C
66) C
67) A
68) B
69) B
70) E
71) A
72) A
73) D
74) B
75) B
76) A
77) B

TBEXAM.COM

TBEXAM.COM

TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES
Talaros Foundations in Microbiology 12th edition Chess Test Bank

Talaros Foundations in Microbiology Edition 12 by Chess

78) A
79) C
80) B
81) B
82) D
83) A
84) D
85) C
86) A
87) mass
88) ions
89) nucleus
90) carbon
91) Peptide
92) nucleic acids
93) messenger
94) cation
95) chemical equation
96) hydrophilic
97) hydrophilic
98) saturated
99) Radioactive isotopes
100) Short Answer

TBEXAM.COM

TBEXAM.COM

Talaros Foundations in Microbiology 12th edition Chess Test Bank
TBEXAM.COM - THE WORLD'S LARGEST TEST BANK AND SOLUTIONS DATABASE WITH UNBEATABLE RATES