

**THE UNIVERSITY OF ZAMBIA**  
**SCHOOL OF NATURAL SCIENCES**  
**BIOLOGICAL SCIENCE DEPARTMENT**

BIO1401/1400 QUIZ 2

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DURATION: 30 Minutes

**INSTRUCTIONS**

- ❖ Write your tutorial group and computer number on the space provided above.
- ❖ Choose the best option
- ❖ Answer all the questions

- 1) What determines the cohesiveness of water molecules?
  1. Covalent Bonds
  2. Hydrogen Bonds
  3. Ionic Bonds
  4. High Specific Heat
  5. Hydrophobic Interactions
- 2) Water is transported in plant tissues against gravity due to which of the following properties?
  1. Adhesion
  2. Hydrogen Bonding
  3. Cohesion
  4. Capillary action
  5. All of the above
- 3) DNA replicate by which of the following model(s)?
  1. Dispersive
  2. Conservative
  3. 1 and 2
  4. Semi- dispersive
  5. Semi- conservative
- 4) The following are used in the process of translation Except.
  1. tRNA
  2. mRNA
  3. Codon
  4. DNA
  5. 3and 4
- 5) What is the maximum number of hydrogen bonds a water molecule can form with neighboring water molecules?
  1. Three
  2. Two
  3. One
  4. Five
  5. Four
- 6) In a single molecule of water, the two hydrogen atoms are bonded to a single oxygen atom by
  1. Non-polar covalent bonds.
  2. Polar covalent bonds.
  3. Ionic bonds.

4. Hydrogen bonds.
  5. 2 and 4
- 7) The partial negative charge at one end of a water molecule is attracted to the partial positive charge of another water molecule. What is this attraction called?
1. Hydrophobic bond
  2. An ionic bond
  3. Hydrogen bond
  4. Covalent bond
  5. Hydrophilic bond
- 8) Which of the following is the product of transcription?
1. Exons
  2. Introns
  3. mRNA
  4. 1 and 3
  5. 2 and 3
- 9) The following codons codes for the amino acid Glycine; **GGU, GGC, GGA** and **GGG**. What property of the genetic code allows several codons for a particular amino acid?
1. degenerate
  2. Universal
  3. nonoverlapping
  4. Unambiguous
  5. 1 and 4
- 10) Transcribed regions present in the mature mRNA are called ..... while the transcribed regions NOT present in the mature mRNA are called .....
1. Introns , exons
  2. Exons , introns
  3. Exons ,5'CAP
  4. 3'Polly A tail, introns
  5. 5'CAP , 3'Polly A tail
- 11) What property of the genetic code allows a particular amino acid for several codons?
1. Degenerate
  2. Universal
  3. Nonoverlapping
  4. Unambiguous
  5. 1 and 4
- 12) If the DNA template reads, **5'ATATTACTGGCT 3'** which of the following will be the corresponding sequence for the mRNA?
1. 3'ATATTACTGGCT 5'
  2. 5'UTUTTUCTGGCT 3'
  3. 5'AUAUUACUGGCU 3'
  4. 3'TATAATGACCGA 5'
  5. 3'UAUAAUGACCGA 5'
- 13) AUG is almost always the
1. Codon
  2. Anticodon
  3. Initiation codon
  4. Termination codon
  5. Initiation anticodon

- 14) Which of the following is a stop codon(s)
1. AAU
  2. AGU
  3. UGA
  4. UAG
  - 3 AND 4
- 15) A DNA strand has the following sequence of bases **5'-ATGGGTCCGAGCTGA-3'** what is the sequence will be expected on a new strand to be synthesized during replication?
1. 5'-TACCCAGGCTCGACT-3'
  2. 3'-UACCCAGGCUCGACU-3'
  3. 5'-AUGGGUCCGAGCUGA-3'
  4. 5'-ATGGGTCCGAGCTGA-3'
  - 3'-TACCCAGGCTCGACT-5'
- 16) What do cohesion, surface tension, and adhesion have in common with reference to water?
1. All increase when temperature increases.
  2. All have to do with nonpolar covalent bonds.
  3. All are produced by covalent bonding.
  - All are properties related to hydrogen bonding.
  5. Both 1 and 3 are correct.
- 17) A..... is the trinucleotide sequence of DNA or RNA that corresponds to specific amino acid.
1. Genetic code
  - Codon
  3. Anti codon
  4. Triplet
  5. mRNA
- 18) Which of the following is true:
1. Every amino acid is coded by a single codon
  2. There more amino acids than there are codons
  3. Each codon codes for more than one amino acid
  4. Every codon codes for an amino acid
  - Each amino acid can be coded for more than one codon
- 19) How many ribonucleotides are needed to specify THREE amino acids.
1. Six
  2. Twelve
  - Nine
  4. Three
  5. Sixty-four
- 20) How many codons are needed to specify THREE amino acids?
1. Six
  2. Sixty-four
  3. Nine
  - Three
  5. Twelve

**I WISH YOU THE VERY BEST IN YOUR TEST 2!**