**Test Review—Molecular Genetics and DNA**

1. Refer to DNA Reading Packet—got the second day back
2. 5-carbon sugar(deoxyribose), phosphate, and one of four nitrogenous bases
3. **Two DNA molecules with one strand of the original double strand existing in each of the new double strands(semi-conservative);**
4. **Requires ligase, polymerase, helicase, and topoisomerase; in the nucleus during S phase of the cell cycle**
5. To make exact copies of DNA prior to cell division

|  |  |  |
| --- | --- | --- |
|  | **DNA** | **RNA** |
| **double or single stranded** | **Double** | **Single** |
| **name of 5-C sugar** | **Deoxyribose** | **Ribose** |
| **nitrogenous bases** | **ATCG** | **AUCG** |
| **location(s) in a cell** | **Nucleus** | **Nucleus and ribosome** |

1. three consecutive nucleotides on mRNA
2. three
3. tRNA made of three nucleotides that carry an amino acid to the ribosomes
4. nucleus
5. mRNA is made from DNA
6. Same as 11…
7. Assembling proteins by bringing amino acids to the ribosomes using the code from mRNA to match with the tRNA anticodon; “making proteins”
8. Ribosomes
9. See 13
10. To make proteins
11. Any change in the sequence of DNA
12. DNA to mRNA to tRNA to amino acids
13. 1)**point—mutation with one nucleotide substitution**

2)**frameshift—insertion or deletion that shifts the entire reading frame of the gene**

Chromosomal: affects all or parts of a chromosomes

1)**insertion—parts added** 3)**inversion—reverse order**

2)**deletion—parts deleted** 4)**translocation—portions misplaced**

20. pairs of homologous chromosomes fail to separate during meiosis

21. trisomy 21

22. point mutation

23. karyotype: a picture of chromosomes used to determine sex and any abnormalities

24. A. 1-22, B. 23, C. trisomy

25. Warning: it is the same chart only oriented horizontally instead of vertically…brains still in skull???

**DNA** TAC GCA AAG CTT ATT

**mRNA** AUG CGU UUC GAA UAA

**tRNA** UAC GGA AAG CUU AUU

**a.a. MET ARG LEU GLU STOP**

26. DNA and RNA polymerase: primary enzymes used during DNA replication and transcription to add nucleotides to newly synthesizing strands of either DNA or mRNA

27. respiratory illness resulting in mass secretions and build up of mucus affecting the respiratory and digestive tracts

28. blood disorder due to a point mutation resulting in misshapen(crescent shaped) red blood cells that impact oxygen diffusion and transport

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