Name: Period:

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| **AP Biology Unit 6. Campbell Ch.16-19.** Your task is to create a quick study card for the Exam. MUST be handwritten. **Accuracy, Neatness – Use ruler to draw charts, tables, etc. and appropriate use of color.** Color needs to be embedded and used appropriately (**DO NOT just color large sections different colors.)** Title of the Quick Study Card in the Top Center of the page First and Last Name, Date in upper right. | **checklist** |
| **1.** Science skills: CER: How does a change at the molecular level lead to a change in phenotype?  |  |
| **2.**  Science skills: Model the lac operon to illustrate gene regulation. |  |
| **3.** Compare prokaryotic and eukaryotic chromosomes. What are plasmids? |  |
| **4.** Make a chart comparing purines and pyrimidines. |  |
| **5.** Name different ways that mutations occur and their results. Include errors in replication, repair, mitosis/meiosis, and environmental factors. Explain. |  |
| **6. C**ompare DNA and RNA structure. |  |
| **7.** Describe and/or diagram the steps involved in DNA Replication, including all enzymes, leading and lagging strands, and the direction that replication occurs. |  |
| **8.** Diagram and explain the steps involved in Transcription. Label all molecules and the template (noncoding, minus or antisense) strand. |  |
| **9.** List the ways eukaryotic cells can modify the original mRNA transcript. |  |
| **10.** Explain the steps involved in translation. How does translation differ in prokaryotes and eukaryotes? What special step do retroviruses take? |  |
| **11.** How are the genes in regulated in a Eukaryote, i.e., positive and negative regulation? What are epigenetic changes?What are the results of these regulations and changes? What role do small RNAs play? |  |
| **12.** Diagram and explain bacterial transformation, transduction, conjugation, and transposition. |  |
| **13.** What is the evolutionary significance of processes which increase genetic variation? |  |
| **14.** How are plasmids utilized in Biological Research? |  |
| **15.** How does electrophoresis work? Explain the process. |  |
| **16.** What enzymes are required for PCR and why? Is there anything else required? |  |
| **17.** What does DNA sequencing do? |  |
| **TOTAL** |  |