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| NORTH SOUTH UNIVERSITY *Department of Biochemistry & Microbiology* |  |

Name: Section: ID:

Course name: Bio103 Semester: Date:

**Midterm**

**Marks: 15. Time: 1 hour 20 minutes**

**Answer any 3 out of 5 subjective questions (Please do not answer more than three questions, negative marking will be enable for extra question answering.)**

**Subjective Questions: 3 × 5 = 15**

1. Describe the structure of nucleotide. Explain how variation of an organism affects its chance of survival. (2.5+2.5)
2. What are the important functions of protein? How carbon dating helps to assume the age of an ancient organic compound? (2.5+2.5)
3. Compare Diffusion and osmosis. Describe how your body makes antibodies by decoding the code of DNA. (2+3)
4. Write the significant differences between Prokaryotic and Eukaryotic cells. Why gametes (Sperm & Ovum) contain haploid number of chromosomes? (2.5+2.5)
5. Write short notes on : (2.5+2.5)
6. Cell cycle (Interphase)
7. Ionic bond with example

**Bonus Questions: 1.5**

**In the light microscope below of dividing cells near the tip of an onion root, identify a cell in each of the following stages by circling: Metaphase, Anaphase, and Cytokinesis. (See the picture in the next page)**

