HIGH SCHOOL BIOLOGY ASSESSMENT: INTRODUCTION TO CELLS

UNIT: INTRODUCTION TO BIOLOGY AND CELLS

STANDARDS:

- NGSS HS-LS1-1: CONSTRUCT AN EXPLANATION BASED ON EVIDENCE FOR HOW THE STRUCTURE OF DNA DETERMINES THE STRUCTURE OF PROTEINS.
- TEKS BIOLOGY 4A: COMPARE AND CONTRAST PROKARYOTIC AND EUKARYOTIC CELLS
- TEKS BIOLOGY 4B: INVESTIGATE AND EXPLAIN CELLULAR PROCESSES, INCLUDING HOMEOSTASIS, ENERGY CONVERSIONS, TRANSPORT OF MOLECULES, AND SYNTHESIS OF NEW MOLECULES

ASSESSMENT TYPE: MIXED FORMAT (MULTIPLE CHOICE, SHORT ANSWER, PERFORMANCE TASK)

TIME: 40-45 MINUTES

PART A: MULTIPLE CHOICE (10 PTS)
1. WHICH STATEMENT BEST DESCRIBES THE CELL THEORY?
A. ALL LIVING THINGS ARE MADE OF DNA
B. CELLS ARE THE BASIC UNIT OF STRUCTURE AND FUNCTION IN LIVING THINGS
C. ALL CELLS CONTAIN A NUCLEUS
D. ONLY MULTICELLULAR ORGANISMS ARE MADE OF CELLS

2. WHICH OF THE FOLLOWING STRUCTURES IS FOUND IN PLANT CELLS BUT NOT IN ANIMAL CELLS?
A. MITOCHONDRIA
B. RIBOSOME
C. CELL WALL
D. NUCLEUS

3. WHICH ORGANELLE IS PRIMARILY RESPONSIBLE FOR PRODUCING ATP?
A. MITOCHONDRIA
B. RIBOSOME
C. GOLGI APPARATUS
D. LYSOSOME

4. WHICH TYPE OF CELL DOES NOT HAVE A NUCLEUS?
A. EUKARYOTIC
B. PROKARYOTIC
C. PLANT
D. ANIMAL

5. WHICH OF THE FOLLOWING BEST DESCRIBES THE FUNCTION OF THE CELL MEMBRANE?
A. GENERATES ENERGY FOR THE CELL
B. PROVIDES STRUCTURE AND SUPPORT
C. REGULATES WHAT ENTERS AND LEAVES THE CELL
D. STORES GENETIC MATERIAL

PART B: SHORT ANSWER (15 PTS)
6. COMPARE AND CONTRAST PROKARYOTIC AND EUKARYOTIC CELLS. INCLUDE AT LEAST TWO SIMILARITIES AND TWO DIFFERENCES.

7. EXPLAIN HOW THE STRUCTURE OF THE MITOCHONDRIA SUPPORTS ITS FUNCTION.

8. DESCRIBE ONE REAL-LIFE EXAMPLE OF HOW MICROSCOPES HAVE ADVANCED OUR UNDERSTANDING OF CELLS.

PART C: PERFORMANCE TASK (10 PTS)
CELL ORGANELLE MODEL PROJECT

CREATE A SIMPLE DIAGRAM OR MODEL OF A EUKARYOTIC CELL THAT INCLUDES AT LEAST FIVE LABELED ORGANELLES. WRITE A SHORT EXPLANATION (3-4 SENTENCES) OF HOW THESE ORGANELLES WORK TOGETHER TO MAINTAIN HOMEOSTASIS.