**The Evolution Of Cellular Life** (p. 258 – 263)

**I. The Evolution Of Prokaryotes**

**1. How old are the oldest known fossils?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. Match the following types of bacteria with the correct definitions.**

1. \_\_\_\_\_\_\_\_ Cyanobacteria A. Photosynthetic; Released oxygen into air

2. \_\_\_\_\_\_\_\_ Eubacteria B. Lack peptidoglycan in cell walls; Changed little

3. \_\_\_\_\_\_\_\_ Archaebacteria C. Contain peptidoglycan in cell walls; Cause disease

**3. Archaebacteria and eubacteria diverged early on during Earth’s development.**

Circle One : True False

**4. Complete the flow chart of prokaryotic evolution.** (Not in the book.)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - lived in the absence of oxygen

↓

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - photosynthetic bacteria; ↑ O2 levels

↓

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - required oxygen to survive

**II. The Evolution Of Eukaryotes**

**1. How long ago did the first eukaryotes appear on Earth?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**2. Define the term endosymbiosis.**

Endosymbiosis –

**3. Explain how endosymbiosis occurred.**

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**4. List four observations that support the endosymbiosis hypothesis.**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**III. Multicellularity**

**1. Define the term protists.**

Protists –

**2.** **How long ago did the first multicellular organisms appear on Earth?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3. Which three kingdoms evolved from protists?**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. What is the Cambrian Explosion?**

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**5. What organism dominated the seas during the Ordovician Period?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**IV. Mass Extinctions**

**1. Define the term mass extinction.**

Mass Extinction –

**2. How long ago did known mass extinctions occur on Earth?**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ million years ago

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ million years ago

3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ million years ago

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ million years ago

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ million years ago

**3. What is believed to cause mass extinctions?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**4. How is human activity currently causing a mass extinction?**

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