

### **CONCEPT: NUCLEIC ACIDS**

1. Purines have \_\_\_\_ ring(s), (each) containing \_\_\_\_ nitrogen(s); whereas pyrimidines have \_\_\_\_ ring(s), (each) containing \_\_\_\_ nitrogen(s).

- a. 1; 1; 1; 1
- b. 1; 2; 1; 2
- c. 2; 1; 1; 2
- d. 2; 2; 2; 1
- e. 2; 2; 1; 2

2. The phosphodiester bonds that link adjacent nucleotides in RNA and DNA:

- a. link A with T and G with C
- b. are susceptible to alkaline hydrolysis
- c. are uncharged at neutral pH
- d. form between the planar rings of the nucleotides bases
- e. link by a phosphate between the 3' hydroxyl of one nucleotide to the 5' hydroxyl of the adjacent nucleotide

3. Alkaline hydrolysis of RNA does not produce:

- a. 2'-AMP
- b. 2'-3'- cGMP
- c. 2'-CMP
- d. 3'-5'-cAMP
- e. 3'-UMP

4. The DNA oligonucleotide pATCGCA has:

- a. seven phosphates
- b. a 3' hydroxyl
- c. a phosphate on its 3' end
- d. an A on its 3' end
- e. violated Chargaff's rules

5. Nucleic acid bases:

- a. absorb UV light at 280 nm
- b. are all about the same size
- c. are all hydrophilic
- d. are roughly planar
- e. all can base pair with each other