

**SAT Practice Papers**  
**SAT Reading Practice Paper 9**

**Reading Passage 1**

Questions 22-31 are based on the following passage and supplementary material.

This passage is adapted from J. D. Watson and F. H. C. Crick, “Genetical Implications of the Structure of Deoxyribonucleic Acid.” ©1953 by Nature Publishing Group. Watson and Crick deduced the structure of DNA using evidence from Rosalind Franklin and R. G. Gosling’s X-ray crystallography diagrams of DNA and from Erwin Chargaff’s data on the base composition of DNA.

1. The chemical formula of deoxyribonucleic acid
2. (DNA) is now well established. The molecule is a
3. very long chain, the backbone of which consists of a
4. regular alternation of sugar and phosphate groups.
5. To each sugar is attached a nitrogenous base, which
6. can be of four different types. Two of the possible
7. bases—adenine and guanine—are purines, and the
8. other two—thymine and cytosine—are pyrimidines.
9. So far as is known, the sequence of bases along the
10. chain is irregular. The monomer unit, consisting of
11. phosphate, sugar and base, is known as a nucleotide.
12. The first feature of our structure which is of
13. biological interest is that it consists not of one chain,
14. but of two. These two chains are both coiled around
15. a common fiber axis. It has often been assumed that
16. since there was only one chain in the chemical
17. formula there would only be one in the structural
18. unit. However, the density, taken with the X-ray
19. evidence, suggests very strongly that there are two.
20. The other biologically important feature is the
21. manner in which the two chains are held together.
22. This is done by hydrogen bonds between the bases.
23. The bases are joined together in pairs, a single base
24. from one chain being hydrogen-bonded to a single

25. base from the other. The important point is that only  
26. certain pairs of bases will fit into the structure.  
27. One member of a pair must be a purine and the other  
28. a pyrimidine in order to bridge between the two  
29. chains. If a pair consisted of two purines, for  
30. example, there would not be room for it.  
31. We believe that the bases will be present almost  
32. entirely in their most probable forms. If this is true,  
33. the conditions for forming hydrogen bonds are more  
34. restrictive, and the only pairs of bases possible are:  
35. adenine with thymine, and guanine with cytosine.  
36. Adenine, for example, can occur on either chain; but  
37. when it does, its partner on the other chain must  
38. always be thymine.  
39. The phosphate-sugar backbone of our model is  
40. completely regular, but any sequence of the pairs of  
41. bases can fit into the structure. It follows that in a  
42. long molecule many different permutations are  
43. possible, and it therefore seems likely that the precise  
44. sequence of bases is the code which carries the  
45. genetical information. If the actual order of the bases  
46. on one of the pair of chains were given, one could  
47. write down the exact order of the bases on the other  
48. one, because of the specific pairing. Thus one chain  
49. is, as it were, the complement of the other, and it is  
50. this feature which suggests how the deoxyribonucleic  
51. acid molecule might duplicate itself.

The table shows, for various organisms, the percentage of each of the four types of nitrogenous bases in that organism's DNA.

Base Composition of DNA				
Organism	Percentage of base in organism's DNA			
	adenine (%)	guanine (%)	cytosine (%)	thymine (%)
Maize	26.8	22.8	23.2	27.2
Octopus	33.2	17.6	17.6	31.6
Chicken	28.0	22.0	21.6	28.4
Rat	28.6	21.4	20.5	28.4
Human	29.3	20.7	20.0	30.0
Grasshopper	29.3	20.5	20.7	29.3
Sea urchin	32.8	17.7	17.3	32.1
Wheat	27.3	22.7	22.8	27.1
Yeast	31.3	18.7	17.1	32.9
<i>E. coli</i>	24.7	26.0	25.7	23.6

Adapted from Manju Bansal, "DNA Structure: Revisiting the Watson-Crick Double Helix." ©2003 by Current Science Association, Bangalore.

22. The authors use the word "backbone" in lines 3 and 39 to indicate that

- A) only very long chains of DNA can be taken from an organism with a spinal column.
- B) the main structure of a chain in a DNA molecule is composed of repeating units.
- C) a chain in a DNA molecule consists entirely of phosphate groups or of sugars.
- D) nitrogenous bases form the main structural unit of DNA.

23. A student claims that nitrogenous bases pair randomly with one another. Which of the following statements in the passage contradicts the student's claim?

- A) Lines 5-6 ("To each... types")
- B) Lines 9-10 ("So far... irregular")

- C) Lines 23-25 (“The bases... other”)
- D) Lines 27-29 (“One member... chains”)

24. In the second paragraph (lines 12-19), what do the authors claim to be a feature of biological interest?

- A) The chemical formula of DNA
- B) The common fiber axis
- C) The X-ray evidence
- D) DNA consisting of two chains

25. The authors’ main purpose of including the information about X-ray evidence and density is to

- A) establish that DNA is the molecule that carries the genetic information.
- B) present an alternate hypothesis about the composition of a nucleotide.
- C) provide support for the authors’ claim about the number of chains in a molecule of DNA.
- D) confirm the relationship between the density of DNA and the known chemical formula of DNA.

26. Based on the passage, the authors’ statement “If a pair consisted of two purines, for example, there would not be room for it” (lines 29-30) implies that a pair

- A) of purines would be larger than the space between a sugar and a phosphate group.
- B) of purines would be larger than a pair consisting of a purine and a pyrimidine.
- C) of pyrimidines would be larger than a pair of purines.
- D) consisting of a purine and a pyrimidine would be larger than a pair of pyrimidines.

27. The authors’ use of the words “exact,” “specific,” and “complement” in lines 47-49 in the final paragraph functions mainly to

- A) confirm that the nucleotide sequences are known for most molecules of DNA.
- B) counter the claim that the sequences of bases

along a chain can occur in any order.

C) support the claim that the phosphate-sugar backbone of the authors' model is completely regular.

D) emphasize how one chain of DNA may serve as a template to be copied during DNA replication.

28. Based on the table and passage, which choice gives the correct percentages of the purines in yeast DNA?

A) 17.1% and 18.7%

B) 17.1% and 32.9%

C) 18.7% and 31.3%

D) 31.3% and 32.9%

29. Do the data in the table support the authors' proposed pairing of bases in DNA?

A) Yes, because for each given organism, the percentage of adenine is closest to the percentage of thymine, and the percentage of guanine is closest to the percentage of cytosine.

B) Yes, because for each given organism, the percentage of adenine is closest to the percentage of guanine, and the percentage of cytosine is closest to the percentage of thymine.

C) No, because for each given organism, the percentage of adenine is closest to the percentage of thymine, and the percentage of guanine is closest to the percentage of cytosine.

D) No, because for each given organism, the percentage of adenine is closest to the percentage of guanine, and the percentage of cytosine is closest to the percentage of thymine.

30. According to the table, which of the following pairs of base percentages in sea urchin DNA provides evidence in support of the answer to the previous question?

A) 17.3% and 17.7%

B) 17.3% and 32.1%

C) 17.3% and 32.8%

D) 17.7% and 32.8%

31. Based on the table, is the percentage of adenine in each organism's DNA the same or does it vary, and which statement made by the authors is most consistent with that data?

A) The same; "Two of... pyrimidines" (lines 6-8)

B) The same; "The important... structure"  
(lines 25-26)

C) It varies; "Adenine... thymine" (lines 36-38)

D) It varies; "It follows... information"  
(lines 41-45)

## Reading Passage 2

Questions 32-41 are based on the following passage.

This passage is adapted from Virginia Woolf, *Three Guineas*. ©1938 by Harcourt, Inc. Here, Woolf considers the situation of women in English society.

1. Close at hand is a bridge over the River Thames,
2. an admirable vantage ground for us to make a
3. survey. The river flows beneath; barges pass, laden
4. with timber, bursting with corn; there on one side are
5. the domes and spires of the city; on the other,
6. Westminster and the Houses of Parliament. It is a
7. place to stand on by the hour, dreaming. But not
8. now. Now we are pressed for time. Now we are here
9. to consider facts; now we must fix our eyes upon the
10. procession—the procession of the sons of educated
11. men.
12. There they go, our brothers who have been
13. educated at public schools and universities,
14. mounting those steps, passing in and out of those
15. doors, ascending those pulpits, preaching, teaching,
16. administering justice, practising medicine,
17. transacting business, making money. It is a solemn

18. sight always—a procession, like a caravanserai  
19. crossing a desert. . . . But now, for the past twenty  
20. years or so, it is no longer a sight merely, a  
21. photograph, or fresco scrawled upon the walls of  
22. time, at which we can look with merely an esthetic  
23. appreciation. For there, trapesing along at the tail  
24. end of the procession, we go ourselves. And that  
25. makes a difference. We who have looked so long at  
26. the pageant in books, or from a curtained window  
27. watched educated men leaving the house at about  
28. nine-thirty to go to an office, returning to the house  
29. at about six-thirty from an office, need look passively  
30. no longer. We too can leave the house, can mount  
31. those steps, pass in and out of those doors,... make  
32. money, administer justice. . . . We who now agitate  
33. these humble pens may in another century or two  
34. speak from a pulpit. Nobody will dare contradict us  
35. then; we shall be the mouthpieces of the divine  
36. spirit—a solemn thought, is it not? Who can say  
37. whether, as time goes on, we may not dress in  
38. military uniform, with gold lace on our breasts,  
39. swords at our sides, and something like the old  
40. family coal-scuttle on our heads, save that that  
41. venerable object was never decorated with plumes of  
42. white horsehair. You laugh—indeed the shadow of  
43. the private house still makes those dresses look a  
44. little queer. We have worn private clothes so  
45. long. . . . But we have not come here to laugh, or to  
46. talk of fashions—men’s and women’s. We are here,  
47. on the bridge, to ask ourselves certain questions.  
48. And they are very important questions; and we have  
49. very little time in which to answer them. The  
50. questions that we have to ask and to answer about  
51. that procession during this moment of transition are  
52. so important that they may well change the lives of  
53. all men and women for ever. For we have to ask  
54. ourselves, here and now, do we wish to join that  
55. procession, or don’t we? On what terms shall we join  
56. that procession? Above all, where is it leading us, the  
57. procession of educated men? The moment is short; it

58. may last five years; ten years, or perhaps only a  
59. matter of a few months longer.... But, you will  
60. object, you have no time to think; you have your  
61. battles to fight, your rent to pay, your bazaars to  
62. organize. That excuse shall not serve you, Madam.  
63. As you know from your own experience, and there  
64. are facts that prove it, the daughters of educated men  
65. have always done their thinking from hand to  
66. mouth; not under green lamps at study tables in the  
67. cloisters of secluded colleges. They have thought  
68. while they stirred the pot, while they rocked the  
69. cradle. It was thus that they won us the right to our  
70. brand-new sixpence. It falls to us now to go on  
71. thinking; how are we to spend that sixpence? Think  
72. we must. Let us think in offices; in omnibuses; while  
73. we are standing in the crowd watching Coronations  
74. and Lord Mayor's Shows; let us think . . . in the  
75. gallery of the House of Commons; in the Law Courts;  
76. let us think at baptisms and marriages and funerals.  
77. Let us never cease from thinking—what is this  
78. “civilization” in which we find ourselves? What are  
79. these ceremonies and why should we take part in  
80. them? What are these professions and why  
81. should we make money out of them? Where in  
82. short is it leading us, the procession of the sons of  
83. educated men?

32. The main purpose of the passage is to

- A) emphasize the value of a tradition.
- B) stress the urgency of an issue.
- C) highlight the severity of social divisions.
- D) question the feasibility of an undertaking

33. The central claim of the passage is that

- A) educated women face a decision about how to engage with existing institutions.
- B) women can have positions of influence in English society only if they give up some of their traditional roles.
- C) the male monopoly on power in English society

has had grave and continuing effects.

D) the entry of educated women into positions of power traditionally held by men will transform those positions.

34. Woolf uses the word “we” throughout the passage mainly to

A) reflect the growing friendliness among a group of people.

B) advance the need for candor among a group of people.

C) establish a sense of solidarity among a group of people.

D) reinforce the need for respect among a group of people.

35. According to the passage, Woolf chooses the setting of the bridge because it

A) is conducive to a mood of fanciful reflection.

B) provides a good view of the procession of the sons of educated men.

C) is within sight of historic episodes to which she alludes.

D) is symbolic of the legacy of past and present sons of educated men.

36. Woolf indicates that the procession she describes in the passage

A) has come to have more practical influence in recent years.

B) has become a celebrated feature of English public life.

C) includes all of the richest and most powerful men in England.

D) has become less exclusionary in its membership in recent years.

37. Which choice provides the best evidence for the answer to the previous question?

A) Lines 12-17 (“There... money”)

B) Lines 17-19 (“It... desert”)

C) Lines 23-24 (“For... ourselves”)

D) Lines 30-34 (“We... pulpit”)