

CORNELL
CRITICAL
THINKING
TEST
LEVEL Z

ROBERT H. ENNIS
JASON MILLMAN

MIDWEST
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INSTRUCTIONS

This is a test to see how clearly and carefully you think.

There are 52 items. You should be able to finish in the 50 minutes given, but be careful not to waste time. Avoid wild guessing, although it is all right to make shrewd guesses when you have good clues. There is one best answer to each item.

Mark your answers with soft pencil on the answer sheet. Do not make any marks on this booklet. **If you finish within the given time, go back and check your answers.**

SECTION IA

In the first five items, two men are debating about voting by eighteen-year-olds. Mr. Pinder is speaker in the first three items, Mr. Wilstings in the last two. Each item presents a set of statements and a conclusion. In each item, the conclusion is underlined. Do not be concerned with whether or not the conclusions or statements are true.

Mark items 1 through 5 according to the following system:

- If the conclusion **follows necessarily** from the statements given, mark **A**.
- If the conclusion **contradicts** the statements given, mark **B**.
- If the conclusion **neither** follows necessarily nor contradicts the statements given, mark **C**.

If a conclusion follows necessarily, a person who accepts the statements is unavoidably committed to accepting the conclusion. When two things are contradictory, they cannot both be correct.

CONSIDER EACH ITEM INDEPENDENTLY OF THE OTHERS.

1. "Mr. Wilstings says that eighteen-year-olds haven't faced the problems of the world, and that anyone who hasn't faced these problems should not be able to vote. What he says is correct, but eighteen-year-olds still should be able to vote. They're mature human beings, aren't they?"
2. "Furthermore, eighteen-year-olds should be allowed to vote because anyone who will suffer or gain from a decision made by the voters ought to be permitted to vote. It is clear that eighteen-year-olds will suffer or gain from the decisions of the voters."
3. "Many eighteen-year-olds are serving their country. Now there can be no doubt that many people serving their country ought to be allowed the vote. From this you can see that many eighteen-year-olds ought to be allowed to vote."
4. "I agree with Mr. Pinder that anyone who will suffer or gain from a decision made by the voters ought to be permitted to vote. And it is true that eighteen-year-olds will suffer or gain from these decisions. But so will ten-year-olds. Therefore, eighteen-year-olds shouldn't be allowed to vote."
5. "Most eighteen-year-olds don't know the difference between right and wrong. The right to vote should not be possessed by the members of a group if most of them don't know this difference. It is obvious then that eighteen-year-olds shouldn't have the right to vote."

SECTION IB

In the next five items, the two men are debating about immigration. Mr. Pinder is speaking in the first three items, Mr. Wilstings in the last two.

Use the same system to mark items 6 through 10:

- A. Conclusion **follows necessarily** from the statements given.
- B. Conclusion **contradicts** the statements given.
- C. **Neither**.

CONSIDER EACH ITEM INDEPENDENTLY OF THE OTHERS.

6. "Mr. Wilstings has proposed that we open our doors to all the foreigners who want to enter our beloved country. But foreigners always have made trouble and they always will. Most of them can't even speak English. Since any group that makes trouble is bad, it follows that foreigners are a bad bunch."
7. "You may not know it, but for the past ten years the Communists in our country have been supporting a policy of unrestricted immigration. It is obvious why they support this policy of opening our doors to foreigners. Now I hate to say this, but Mr. Wilstings' support of this policy leaves us but one conclusion. Mr. Wilstings is a Communist."
8. "Mr. Wilstings has said that most foreigners have made positive contributions to our country. This is true. I will also admit that a group is not bad if most of its members do make positive contributions. But don't be deceived by Mr. Wilstings' fine-sounding language. Foreigners are a bad group and shouldn't be admitted."
9. "I'm sorry that Mr. Pinder feels that way about it. Sure, foreigners make trouble and most of them can't speak English. But even though it's true that people that make trouble ought not to be admitted, we still ought to admit foreigners to our country. You don't want to be selfish do you?"
10. "All of you think it was all right to open our doors to all people from distant lands in the nineteenth century. Any person who thinks it was all right to do so at that time ought also to be in favor of doing so now. Thus, you ought to be in favor of opening our doors now to those from distant lands who are seeking admission to our country."

SECTION II

The discussion that follows is divided into parts to correspond to items 11 through 21. There is faulty thinking going on in each part. Your job for each item is to **pick the one best reason why the thinking is faulty**.

To take this part of the test, you need not know anything about the chlorination of water supplies.

11. DOBERT: I hear that you and some other crackpots are trying to get Gallton to chlorinate its water supply. You seem to think that this will do some good. There can be no doubt that either we should chlorinate or we shouldn't. Only a fool would be in favor of chlorinating the water, so we ought not do it.

ALGAN: You are correct at least in saying that we are trying to get the water chlorinated.

Pick the one best reason why some of this thinking is faulty.

- A. Dobert is mistakenly assuming that there are only two alternatives.
- B. Dobert is using a word in two ways.
- C. Dobert is using emotional language that doesn't help to make his argument reasonable.

12. DOBERT: I guess you know that to put chlorine in the water is to threaten the health of every one of Gallton's citizens, and that, you'll admit, is bad.

ALGAN: What right do you have to say that our health will be threatened?

DOBERT: "Healthy living" may be defined as living according to nature. Now we don't find chlorine added to water in nature. Therefore, everyone's health would be threatened if chlorine were added.

Pick the one best reason why some of this thinking is faulty.

- A. Dobert is using emotional language that doesn't help to make his argument reasonable.
- B. Dobert's thinking is in error.
- C. Dobert is using a word in two different ways.

13. DOBERT: Furthermore, Gallton's water is pure already. I know this from the report, which you haven't seen yet, that will soon be released by the State Water Survey.

ALGAN: You can't know that Gallton's water is pure. The State Water Survey didn't test all the water that we have available to us. They only took samples. Furthermore, you can't know that they didn't make an error in their investigation because there's always a chance for error in any investigation. Therefore, you could never know that Gallton's water is pure.

Pick the one best reason why some of this thinking is faulty.

- A. Algan is not using "know" in its ordinary sense, yet he is expecting the effect that follows from its being used in the ordinary sense.
 - B. Dobert, in using secret evidence, is not being fair, since this evidence is not available to everyone for inspection.
 - C. Algan can't know that an error was made in the investigation.
14. DOBERT: I understand that you look on this thing as an experiment. I'm sure that the citizens of Gallton don't want to be guinea pigs in this matter.

ALGAN: This is a demonstration. Nobody ought to object to a demonstration, since the purpose of a demonstration is not to find out something, but rather to show us something that is already known. An additional value of this demonstration of chlorination is that its purpose is also to test for the long-range effects of chlorination on the human body. This objective of the demonstration is a worthy one.

Pick the one best reason why some of this thinking is faulty.

- A. Algan has not shown that knowing the long-range effects of chlorination is a worthy objective.
 - B. Algan is using a word in two ways.
 - C. There is an error in thinking in this part.
15. ALGAN: The question boils down to two alternatives. Either we want clean, chlorinated water or we want bad-smelling, disease-ridden water. The citizens of Gallton certainly don't want bad-smelling, disease-ridden water. What is left but to chlorinate?

Pick the one best reason why some of this thinking is faulty.

- A. Algan hasn't shown that there are only two alternatives.
- B. Algan is using emotional language that doesn't help to make the argument reasonable.
- C. Algan is using the same word in two ways.

16. DOBERT: Laying aside the question of whether medication is bad or good, wouldn't you say that you are proposing a plan for medication?

ALGAN: Not at all. Is killing germs in the water supply the same as treating a disease of the human body? Certainly not. Therefore, my plan cannot be called a plan for medication.

DOBERT: Oh, but it is medication. Isn't one of your stated goals the prevention of disease? Medication is the process of trying to restore or preserve health in any manner whatsoever. Whether your plan actually would result in preserving or restoring health doesn't matter. The point is that you would be trying to do so and thus would be medicating people.

Pick the one best reason why some of this thinking is faulty.

- A. There is a serious mistake in the thinking in this part.
 - B. Dobert's conclusion doesn't necessarily follow from the reasons he gives.
 - C. Dobert and Algan are using the same word differently.
17. DOBERT: Can you prove that chlorination is useful in making water safe?

ALGAN: Yes, I can. Devton gets its water from the same place that we do. Three years ago, Devton had nine cases of typhoid fever. Two years ago they started to chlorinate and they had only two cases that year. That's proof enough.

Pick the one best reason why some of this thinking is faulty.

- A. Algan is using the same word in two ways.
 - B. That's not a big enough reduction. If there were no typhoid at all the second year, then Algan would have proven his statement.
 - C. One such comparison is not enough to prove such a statement.
18. DOBERT: In reality you are proposing to poison our water supply when you propose to put chlorine gas in the water. Chlorine gas has been used in war to kill human beings. It is a deadly poison. Nobody wants to be poisoned.

ALGAN: But when chlorine is mixed 3 1/2 parts per million, nobody will be hurt at all.

DOBERT: That's not the point. You'd still be putting a deadly poison in the water. That's what it means to poison the water. So anyone drinking the water would necessarily be poisoned.

Pick the one best reason why some of this thinking is faulty.

- A. Algan is missing the point.
- B. Dobert is using the same word in two ways.
- C. Dobert's thinking is in error.

19. DOBERT: Furthermore, Gallton's water is safe now.

ALGAN: That's not true. Nothing is safe as long as there's a conceivable chance for something to go wrong. From this it follows that Gallton's water is not safe.

Pick the one best reason why some of this thinking is faulty.

- A. Algan has made the word "safe" useless for communicating information.
- B. Algan hasn't said what he means by "safe."
- C. There is a flaw in Algan's thinking.

20. DOBERT: The citizens of Gallton will have to make a choice. Either we want absolutely pure water or we should keep our present setup. Now any chemist can tell you that from a practical point of view it is impossible to remove all the impurities from a water supply. So we should leave things the way they are.

Pick the one best reason why some of this thinking is faulty.

- A. Dobert hasn't shown that there are only two alternatives.
- B. Dobert is using the same word in two ways.
- C. The conclusion doesn't necessarily follow from the reasons given.

21. DOBERT: To add chlorine is to add a drug to Gallton's water supply. Obviously, we don't want our citizens to be drugged every time they take a drink of water.

ALGAN: What right do you have to say that chlorine is a drug?

DOBERT: The term "drug" is defined in section 201 (g) of the Federal Food, Drug, and Cosmetic Act as an article intended for use in the diagnosis, cure, treatment, or prevention of disease in man or other animals. Now, since chlorine is intended for use in the prevention of disease, it is a drug.

Pick the one best reason why some of this thinking is faulty.

- A. Dobert's thinking is in error.
- B. Algan should realize that a person has a right to use a word in a special way. The important thing is that there be understanding of what is said.
- C. Dobert is using a word in two different ways.

SECTIONS III, IV, AND V

REFER TO THE FOLLOWING EXPERIMENT:

An experiment was performed by Drs. E. E. Brown and M. R. Kolter in the veterinary laboratory of the British Ministry of Agriculture and Fisheries. The doctors were interested in what happens to ducklings that eat cabbage worms. Several cases had been reported to them in which ducklings had "mysteriously" died after being in cabbage patches containing cabbage worms.

Three types of ducklings were secured (Mallards, Pintails, and Canvasbacks), two broods of each. Each brood was then split into two equal groups as much alike as possible. For a one-week period they were provided an approved diet for ducklings. All had this diet, except that half of each brood were provided something more: two cabbage worms daily per duckling. The condition of the ducklings at the end of the week was observed and is reported in the following table:

TYPE OF DUCKLING	ORIGINAL NUMBER IN BROOD	REGULAR DIET			REGULAR DIET PLUS WORMS		
		Healthy	Ill	Dead	Healthy	Ill	Dead
MALLARD	8	3	1			2	2
	6	3					3
PINTAIL	6	2		1			3
	8	3	1		1		3
CANVASBACK	8	4				1	3
	8	3	1			1	3
TOTALS	44	18	3	1	1	4	17

The doctors drew this conclusion: CABBAGE WORMS ARE POISONOUS TO DUCKLINGS.

SECTION III

The experiment attracted a great deal of attention. Many statements were made about the experiment and about the protection of ducklings.

Items 22 through 25 each contain a pair of statements (A & B), which are underlined. Read both, then decide which, if either, is more believable.

Mark items 22 through 25 according to the following system:

If you think the **first** statement is more believable, mark **A**.

If you think the **second** statement is more believable, mark **B**.

If **neither** statement is more believable than the other, mark **C**.

In making your decisions use the information already provided and the information in parentheses after each statement.

22. A. Cabbage worms are poisonous to ducklings (said by Dr. Kolter).
- B. Six Canvasbacks died during the week of the experiment (said by Dr. Kolter).
- C. Neither statement is more believable.
23. A. Six Pintails were healthy at the end of the experiment (said by Dr. Brown).
- B. Four worm-fed ducklings were ill at the end of the experiment (said by Dr. Brown).
- C. Neither statement is more believable.
24. A. During the week following the experiment, all of the ill ducklings died. (From an article in a magazine that can be found on almost every newsstand. The author, a popular international writer, stated that he obtained his information from Drs. Brown and Kolter.)
- B. During the week following the experiment, the rest of the worm-fed ducklings died (from the report written by Drs. Brown and Kolter).
- C. Neither statement is more believable.
25. A. Independent laboratory studies have shown conclusively that ducklings sprayed with Wrodane will not be harmed by eating cabbage worms (from an article in a magazine published by a chemical company that makes Wrodane).
- B. No satisfactory way has yet been found to counteract the poisonous effects of cabbage worms on ducklings (from the magazine article mentioned in Item No. 24, which appeared two months after the Wrodane article).
- C. Neither statement is more believable.

SECTION IV

From the original experiment, the doctors drew this conclusion:
CABBAGE WORMS ARE POISONOUS TO DUCKLINGS.

Mark items 26 through 38 according to the following system:

- A. If true, this information **supports** the conclusion.
- B. If true, this information **goes against** the conclusion.
- C. This information does **neither**.

CONSIDER EACH ITEM INDEPENDENTLY OF THE OTHERS.

26. The experiment is repeated. The results are similar.
27. The experiment is repeated with three different varieties of ducklings, which are younger than the ones used in the original experiment. At the end of the week, two of the regular-diet ducklings are dead, and twenty of the worm-diet ducklings are dead.
28. At the time of the original experiment, there was an apple tree shedding apples into the cages of both sets of ducklings. The experimenters did not expect this to happen. About the same number of apples fell into each cage. This kind of apple does not affect the health of ducklings.
29. The experiment is repeated in Canada with twice as many ducklings. None of the ducklings die. At the end of the week, two of the regular-diet ducklings are ill, and three of the worm-diet ducklings are ill.
30. The experiment is repeated in Scotland. At the end of the week, all of the worm-fed ducklings are dead, and all of the regular-fed ducklings are alive and healthy. But it is discovered that the man who handled the worms had been spraying fruit trees with arsenic and had carelessly transferred some arsenic to the feeding pan of the worm-fed ducklings. Arsenic is a deadly poison.
31. A team of expert biologists examines the body structure and processes of ten common varieties of ducklings, including the three used in the experiment. The biologists can find no significant differences among the varieties examined except for coloring.
32. It is discovered that during the original experiment the regular-fed ducklings had less sunlight than the worm-fed ducklings. It is not known whether or not the difference in amount of sunshine would have an effect on the health of ducklings.
33. A group of well-known Canadian duck breeders report that they discovered long ago that it was dangerous to ducklings to let them run in a cabbage patch.

Reminder: Mark these items as follows:

- A. If true, this information **supports** the conclusion.
- B. If true, this information **goes against** the conclusion.
- C. This information does **neither**.

CONSIDER EACH ITEM INDEPENDENTLY OF THE OTHERS.

- 34. It is discovered that both sets of ducklings reached through their cages and drank water from a little ditch that ran past both cages. They drank practically no water out of the pans that were in the cages. The water in the ditch was ordinary water.
- 35. The experiment is repeated in Canada with three different varieties of ducklings. All of the ducklings die, whether worm-fed or not.
- 36. The experiment is repeated in the United States with twice as many ducklings. At the end of the week, 40 of the 44 regular-diet ducklings are alive and healthy, and 39 of the 44 worm-fed ducklings are alive and healthy.
- 37. It turns out that at the time of the original experiment a large oak tree was dropping acorns into the cages of the worm-fed ducklings only. The effect of this kind of acorn on the health of ducklings is not known.
- 38. A similar experiment is performed with young dogs. Another is performed with young turtles. In both cases the results are similar to those of the original duckling experiment.

SECTION V

A research worker sets out to test the truth of the statement:

IF ANY DUCKLING EATS A CABBAGE WORM,
THE DUCKLING WILL DIE WITHIN SIX HOURS.

The research worker has developed an accurate, painless, and noninjurious stomach-testing method for telling whether a duckling has eaten a cabbage worm during the previous twelve hours. The method can be used both with dead ducks and live ducks.

In planning his experiments, he needs to make some *predictions* from the above statement.

- a. PREDICTIONS TELL WHAT WOULD BE TRUE, IF THE STATEMENT WERE TRUE.
- b. PREDICTIONS SHOULD BE USEFUL IN GUIDING AN ACTUAL EXPERIMENT.

Remembering these two rules about predictions, answer items 39 through 42. The items refer to the seven possible predictions listed after item 42.

39. Of j, k, and l, which is the best prediction? Mark A for j; mark B for k; mark C for l.
40. Of k, l, and m, which is the best prediction? Mark A for k; mark B for l; mark C for m.
41. Of m, n, and o, which is the best prediction? Mark A for m; mark B for n; mark C for o.
42. Of n, o, and p, which is the best prediction? Mark A for n; mark B for o; mark C for p.

Possible predictions:

- j. If any duckling eats a cabbage worm, the duckling will be dead within six hours; and if a stomach test is performed within twelve hours after eating the worm, the results of the stomach test will show that the duckling has eaten at least one cabbage worm.
- k. If any duckling does not die within six hours after a given period, then it did not eat any cabbage worms during that period.
- l. Suppose six hungry Pintail ducklings are put for one hour in a cabbage patch containing cabbage worms and then put in a clean cage for six hours. If any do not die during that period, the results of the stomach test will show that these ducklings did not eat any cabbage worms.
- m. If one Mallard duckling is selected at random from each of ten different broods, and all ten ducklings are kept away from cabbage worms for a twelve-hour period, then none will die during the last six hours of the twelve-hour period.
- n. If one Mallard duckling is selected at random from each of six different broods, and each selected duckling is fed a cabbage worm, all six ducklings will be dead within six hours.
- o. Suppose twelve hungry, randomly selected Canvasback ducklings are turned loose for one hour in a cabbage patch containing cabbage worms and then put in a clean cage for six hours. If each dies during that period, the results of the stomach tests will show that each has eaten a cabbage worm.
- p. If a group of ten healthy Canvasback ducklings that would probably live if not fed cabbage worms is randomly split in half, and each half is treated the same except that one group of five eats cabbage worms, then the worm-fed ducklings will die within six hours and the other ducklings probably will not.

SECTION VI

Items 43 through 46 provide situations in which a definition is called for. From the three definitions that follow each description, pick the one (**A**, **B**, or **C**) that best gives the meaning.

43. "That's a nice stock car you have there, Bill," his mother remarked.

"Stock car!" exclaimed Bill. "That's no stock car. Did you ever see a car in a dealer's showroom with bumpers made out of heavy pipe? Do the automobile manufacturers turn out cars with no fenders? Of course not."

Bill's mother then asked, "Just what do *you* mean by 'stock car'?"

Of the following, which is the best way to state Bill's notion of a stock car?

- A. A stock car is an automobile that is for the most part made of standard parts put out by automobile manufacturers, but which might have missing fenders and special bumpers.
 - B. A stock car is an automobile that has fenders and does not have bumpers made out of pipe.
 - C. A stock car is a standard automobile, as turned out by the factory and sold to the public.
44. "It certainly is a stock car," said Joan. "It has an ordinary engine that hasn't been changed since it came off the assembly line. That alone makes it a stock car and that's all that matters."

Of the following, what is the best way to state Joan's notion of a stock car?

- A. A stock car is an automobile that is for the most part made of standard parts put out by automobile manufacturers, but which might have the fenders missing and special bumpers.
- B. A stock car is an automobile with a standard engine.
- C. A stock car is where the engine is standard.

45. "What are you making with that dough?" asked Mary's father.

"Dough!" exclaimed Mary. "Did you ever see anything made with yeast that was baked immediately after it was mixed? Naturally not," she said as she put the mixture into the oven immediately after mixing it. "Therefore, it's not dough."

"What do *you* mean by 'dough'?" her father asked.

Of the following, which is the best way to state Mary's notion of dough?

- A. Dough is a mixture of flour and other ingredients, including yeast.
- B. Dough is a mixture of flour and other ingredients, not baked immediately.
- C. Dough is a mixture of flour and other ingredients, often baked in an oven.

46. "Why, of course that's dough," said Jim. "You're making cookies aren't you? It's not even called dough unless it's used for cookies."

Of the following, which is the best way to state Jim's notion of dough?

- A. Dough is a mixture of flour and other ingredients not baked immediately unless used for cookies.
- B. Dough is a mixture of flour and other ingredients which is used for cookies.
- C. Dough is a mixture of flour and other ingredients, which is used for cookies unless it's baked immediately.

SECTION VII

In items 47 through 52, someone is speaking; but in each case there is an unstated assumption. An assumption is a statement that is taken for granted. From the choices that follow, select the one (**A**, **B**, or **C**) that is most probably the unstated assumption. Consider each item by itself.

47. MR. DOBERT: The fact that Gallton's children have been forced to work explains their misbehavior.
- A. Children who have never been forced to work behave properly.
 - B. Children who behave improperly have been forced to work.
 - C. Children who have been forced to work behave improperly.

Reminder: Select the one (A,B, or C) that is most probably the unstated assumption.

48. MRS. DOBERT: What we should do is not make them work. Then they would be all right. I know it.
- A. Children who are forced to work will misbehave.
 - B. Children who are not forced to work will behave properly.
 - C. Children who behave properly have not been forced to work.
49. MRS. ALGAN: We ought to make them work. That will cure them.
- A. Children who aren't forced to work will misbehave.
 - B. Children who are forced to work will behave properly.
 - C. Children who behave properly have been forced to work.
50. MR. ALGAN: The explanation of the misbehavior of Gallton's present-day crop of youngsters is a simple one. These children have been severely punished at some time or other. That's the trouble.
- A. Children who have been severely punished misbehave.
 - B. Children who misbehave have been severely punished at some time.
 - C. Children who haven't been severely punished behave properly.
51. MRS. DOBERT: Their behavior can be explained by realizing that most of these youngsters have never been punished.
- A. Children who are punished behave properly.
 - B. Children who behave improperly have never been punished.
 - C. Children who have never been punished behave improperly.
52. MR. DOBERT: What we should do is never punish them. That would take care of things.
- A. Children who behave badly have been punished at some time.
 - B. Children who are punished will misbehave.
 - C. Children who behave properly have never been punished.

THE END. GO BACK AND CHECK YOUR ANSWERS.