

## Hydrocarbon Pollution Intelligence Test

### **MULTIPLE CHOICE TEST** (hold thumb over correct answer at right)

1) How much water (in gallons) will one quart of oil contaminate?

- a) 15,000 gallons
- b) 150,000 gallons
- c) 250,000 gallons
- d) 500,000 gallons
- e) Oil does not contaminate water

**ANSWER** to question 1. is **c**

**EXPLANATION:** Just one quart of oil can contaminate up to a quarter million gallons of drinking water or cause an oil slick almost 2 acres in size.

2) If one quart of oil is dumped into water, how big of an oil slick (in acres ) will the quart of oil cause?

- a) 1.0 acres
- b) 2.0 acres
- c) 4.0 acres
- d) 8.0 acres
- e) Oil does not cause oil slicks

**ANSWER** to question 2) is **b**

**EXPLANATION:** Just one quart of oil can contaminate up to a quarter million gallons of drinking water or cause an oil slick almost 2 acres in size.

3) Which of the following dumped more oil into the environment?

- a) Backyard Mechanics in Michigan
- b) Californians using Baby oil and sun tan lotion and then going swimming
- c) McDonald's disposing of the oil used to fry French fries
- d) The Exxon Valdez spill into Alaska's Prince William Sound
- e) No one intentionally dumps oil into the environment.

**ANSWER** to question 3) is **a**

**EXPLANATION:** Backyard mechanics dump more used oil into Michigan's environment each year than the Exxon Valdez spilled into Alaska's Prince William Sound

4) How does oil affect birds?

- a) It reduces their mating opportunities
- b) It causes them to sun burn more quickly
- c) It reduces their ability to eat
- d) It enhances the ability of their feathers to repel water
- e) It impacts the insulating properties of the plumage.

**ANSWER** to question 4) is **e**

**EXPLANATION:** Oil destroys the waterproofing and insulating properties of plumage in birds by disrupting the microscopic structure of the feathers.

5) How many gallons of oil was spilled by The Exxon Valdez into Alaska's Prince William Sound?

- a) 9.8 million gallons
- b) 11.0 million gallons
- c) 14.7 million gallons
- d) 16.0 million gallons
- e) None

**ANSWER** to question 5) is **b**

**EXPLANATION:** Approximately 11 million gallons or 257,000 barrels or 38,800 metric tons.

6) How many Olympic size swimming pools would be required to hold the amount of oil spilled by the Exxon Valdez into Prince William Sound?

- a) 25
- b) 84
- c) 125
- d) 162
- e) No one puts Oil in Olympic pools

**ANSWER** to question 6) is **c**

**EXPLANATION:** Approximately 11 million gallons or 257,000 barrels or 38,800 metric tons. Picture the swimming pool at your school or in your community. The amount of spilled oil is roughly equivalent to 125 olympic-sized swimming pools.

7) How many miles of shoreline were impacted by Oil spilled by the Exxon Valdez?

- a) 1,540
- b) 1,300
- c) 830
- d) 389
- e) Oil does not come to shore - it is absorbed by the ocean

**ANSWER** to question 7) is **b**

**EXPLANATION:** Approximately 1,300 miles. 200 miles were heavily or moderately oiled (meaning the impact was obvious); 1,100 miles were lightly or very lightly oiled (meaning light sheen or occasional tar-balls). By comparison, there is more than 9,000 miles of shoreline in the spill region.

8) How large of an Area did the Exxon Valdez oil spill cover?

- a) The spill stretched for 145 miles
- b) The spill stretched for 390 miles
- c) The spill stretched for 460 miles
- d) The spill stretched for 580 miles
- e) The spill was cleaned up within 2 miles of the ship

**ANSWER** to question 8) is **c**

**EXPLANATION:** From Bligh Reef the spill stretched 460 miles to the tiny village of Chignik on the Alaska Peninsula.

9) The Exxon Valdez oil spill in Prince William Sound was:

- a) The largest spill ever
- b) The 2<sup>nd</sup> largest spill ever
- c) The 20<sup>th</sup> largest spill ever
- d) Not in the top 50 largest spills
- e) Unfortunate and unavoidable

**ANSWER** to question 9) is **d**

**EXPLANATION:** The Exxon Valdez spill, though still one of the largest ever in the United States, has dropped from the top 50 internationally (<http://www.cutter.com/osir/biglist.htm>). It is widely considered the number one spill worldwide in terms of damage to the environment, however. The timing of the spill, the remote and spectacular location, the thousands of miles of rugged and wild shoreline, and the abundance of wildlife in the region combined to make it an environmental disaster well beyond the scope of other spills

10) How many animals died outright from the Exxon Valdez oil spill?

- a) 5,000
- b) 10,000
- c) 15,000
- d) 20,000
- e) No body knows

**ANSWER** to question 10) is **e**

**EXPLANATION** No one knows. The carcasses of more than 35,000 birds and 1,000 sea otters were found after the spill, but since most carcasses sink, this is considered to be a small fraction of the actual death toll. The best estimates are: 250,000 seabirds, 2,800 sea otters, 300 harbor seals, 250 bald eagles, up to 22 killer whales, and billions of salmon and herring eggs.



11) How much oil does the world consume each day?

- a) 50 - 59 million barrels
- b) 60 - 69 million barrels
- c) 70 - 79 million barrels
- d) 80 - 89 million barrels
- e) 90 - 99 million barrels

**ANSWER** to question 10) is **c**

**EXPLANATION:** The total world consumption of crude oil in 1996 was 71.7 million barrels per day (there are 42 US gallons in a barrel, or 159 liters). OPEC estimates that total world oil consumption could reach around 100 million barrels per day by the year 2020. (From OPEC Annual Statistical Bulletin: 1996, OWEM Scenarios Report: 1998.) <http://www.opec.org/faqs.htm>

12) What percentage of the oil produced ends up in the ocean?

- a) 5.00%
- b) 2.5%
- c) 0.25%
- d) 0.025%
- e) 0.0025%

**ANSWER** to question 12) is **c**

**EXPLANATION:** The amount of petroleum products ending up in the ocean is estimated at 0.25% of world oil production: about 6 million tons per year *approx 48 million gallons*  
[http://daac.gsfc.nasa.gov/CAMPAIGN\\_DOCS/OCDST/shuttle\\_oceanography\\_web/oss\\_122.html](http://daac.gsfc.nasa.gov/CAMPAIGN_DOCS/OCDST/shuttle_oceanography_web/oss_122.html)

13) Oil spills account for what percentage of the oil entering the oceans?

- a) 5%
- b) 10%
- c) 25%
- d) 50%
- e) 75%

**ANSWER** to question 13) is **a**

**EXPLANATION:** Oil spills account for only about five percent of the oil entering the oceans. The Coast Guard estimates that for United States waters sewage treatment plants discharge twice as much oil each year as tanker spills.

([http://seawifs.gsfc.nasa.gov/OCEAN\\_PLANET/HTML/education\\_threats.html](http://seawifs.gsfc.nasa.gov/OCEAN_PLANET/HTML/education_threats.html)). During the last decade, more than one billion gallons of oil spilled worldwide.

<http://www.marinergroup.com>, see also <http://www.marinergroup.com/oil-spill-history.htm>

14) So if oil spills account for 5% of the oil entering the oceans, and twice that, 10% is from sewage treatment plants, and these two together only account for 15% of all of the oil entering the ocean -- where does the majority of the rest come from?

- a) Restaurants using cooking oil
- b) Recreational boating and land runoff
- c) Other (2 stroke) engine exhaust
- d) Heavy equipment
- e) Minute Lube shops

**ANSWER** to question 14) is **b**

**EXPLANATION:** Land runoff and recreational boating account for nearly  $\frac{3}{4}$  of the 25,000,000 gallons of petroleum released into the oceans annually

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