

# ABT OPEN 1995 Round 9

## Semifinals

Questions written and edited by  
**TRIAD QUESTIONS**

1.

### TOSS-UP SCIENCE

ALH 84001 is the oldest, at 4.5 billion years, of the eleven known meteorites found on Earth that came from this planet and an analysis of its composition seems to indicate that there once was running water and organic material there. For ten points name this planet that has been the subject of popular science fiction stories by Edgar Rice Burroughs, Robert Heinlein and Ray Bradbury.

ANSWER---(Mars)

1.

### BONUS SCIENCE

Answer the following questions about the theory of continental drift.

1. Name the German geophysicist who proposed this theory.
2. It was quickly realized that this theory could explain why the continents looked like they fit together. Name the supercontinent that used to exist before it was broken apart by the drifting continents.
3. This realization explained why the plant and animal life along the Gulf of Guinea was the same as the ones found along the coast of this country in South America, none of which was found anywhere else in the world.
4. In the 1960's a new theory was proposed that explained continental drift, mid ocean ridges, trenches and the world's pattern of earthquakes. Name this theory that says the magma beneath the crust moves thin plates across the surface of the earth.

ANSWER---1.(Alfred Wegener)      2.(Pangaea)      3.(Brazil)      4.(Plate Tectonics)

2.

### TOSS-UP SOCIAL STUDIES

Originally established in 1921 as part of the League of Nations, it consists of fifteen members, each serving for a term of nine years, who are now elected by the General Assembly or the Security Council. All members of the UN are part of it, with the United States holding the special proviso known as the Connally amendment of deciding what is within its jurisdiction. For ten points name this organization located in the Hague.

ANSWER----(World Court or International Court of Justice)

2.

### BONUS SOCIAL STUDIES

Answer the following questions about the Peggy Eaton affair.

1. During which United States president's term did it take place.
2. Peggy Eaton's husband John was appointed to what post in the cabinet.
3. Name the vice-president whose wife was one of the major reasons the other wives of the cabinet members would not associate with Peggy Eaton.
4. As a result of this affair the President stopped meeting with his cabinet and took advice from a group of friends, which became to be called what?
5. What secretary of state, in order to gain favor with the President, engineered the resignations of all but one cabinet members?

ANSWER---1.(Andrew Jackson)      2.(Secretary of War)      3.(John Calhoun)  
4.(Kitchen Cabinet)      5.(Martin van Buren)

3.

**TOSS-UP MATH**

Given a circle with a diameter of 8 meters, and a square which is inscribed in the circle, what is the length of the side of the square?

ANSWER---(4 times the square root of 2)

3.

**BONUS MATH**

Calculate the areas of each of the following.

1. A circle with a diameter of 30 meters.
2. An equilateral triangle with a side of length of 12 meters.
3. A trapezoid with bases of lengths 21 and 17 meters and a height of 11 meters.
4. The area contained in a circle with a diameter of 44 meter but not in a square inscribed in the circle.

ANSWER---1.(225 square meters) 2.(36 times root 3 square meters) 3.(209 square meters)  
4.(484 pi minus 968 square meters)

4.

**TOSS-UP LITERATURE**

She received the Cross of the Legion of the Honor for her relief work in Paris during WWI. Her real fame would come from her novels such as the Valley of Decision and The Reef, as well as a novel containing the characters Ellen Olenska, Newland Archer and May Welland. For ten points name this author of the novel The Age of Innocence.

ANSWER---(Edith Wharton)

4.

**BONUS LITERATURE**

Given a book name the author.

1. Caesar and Cleopatra.
2. Kon-Tiki.
3. The Seagull.
4. Swiss Family Robinson.

ANSWER---1.(George Bernard Shaw) 2.(Thor Heyerdahl) 3.(Anton Chekhov)  
4.(Johann Wyss)

5.

**TOSS-UP FINE ARTS**

While already subsidizing Pyotr Tchaikovsky, Nadejda von Meck began to patronize this man and they soon became intimate friends and he even went to so far as to unsuccessfully propose marriage to her daughter Sonia. For ten points name this French composer of La Mer [Mare] and Claire de Lune.

ANSWER---(Achille-Claude Debussy)

5.

**BONUS MISCELLANEOUS**

Identify the composer's of the following operas.

1. The Magic Flute.
2. Peter Grimes.
3. Benvenuto Cellini.
4. Tannhauser.

ANSWER---1.(Wolfgang A. Mozart) 2.(Benjamin Britten) 3.(Hector Berlioz)  
4.(Richard Wagner)

6.

**TOSS-UP MISCELLANEOUS**

Harold Lee, Howard Hunter, Gordon Hinckley and Ezra Taft Benson are just some of the men who have served as this religion's 'prophet, seer, revelator and President'. Founded in 1830 in Fayette, NY, the members moved onto Nauvoo, Illinois and then to Utah where they elected their first President. For ten points name this religion who elected Brigham Young.

ANSWER---(Mormons or Church of Jesus Christ of Latter Day Saints)

6.

**BONUS MISCELLANEOUS**

Given a saint identify of what European country they are the patron saint.

1. Patrick.      2. Denis.      3. Andrew.      4. George.

ANSWER---1.(Ireland)    2.(France)    3.(Russia or Scotland)    4.(England or Portugal)

7.

**TOSS-UP SOCIAL STUDIES**

Junko Tabei was the first woman, Alison Hargreaves was the first woman to do it unaided and without oxygen cylinders and in 1953 Tenzing Norgay and Edmund Hillary became the first people to do it. For ten points name this accomplishment which can only occur on a mountain on the Nepal-China border.

ANSWER---(Climb Mt. Everest)

7.

**BONUS SOCIAL STUDIES**

Identify the following cities of Vietnam from a description.

1. Formerly known as Saigon, it is the largest city in Vietnam.
2. Located on the Red river, it was the capital of French-Indo China and is now the capital of Vietnam.
3. The third largest city in Vietnam, this port is located in the delta of the Red River and was heavily bombed during the war.
4. Located near the Laos border, this city was the site of the surrender of French forces in 1954.

ANSWER---1.(Ho Chi Minh city)    2.(Hanoi)    3.(Haiphong)    4.(Dien Bien Phu)

8.

**TOSS-UP MATH**

What is the first derivative in simplest form of the function  $y$  equals sine squared of  $x$  plus cosine squared of  $x$ ?

ANSWER---(0)

8.

**BONUS MATH**

Given the following functions, and an  $X$  coordinate, give the value of the slope of the function.

1.  $Y$  equals  $5X$  squared plus  $10X$  at  $X = 7$ .
2.  $Y$  equals  $15X$  squared plus  $12X$  plus  $47$  at  $X = 13$ .
3.  $Y$  equals  $2$  cosine of  $3X$  at  $X = \pi$ .
4.  $Y$  equals  $12X$  cubed minus  $4X$  squared plus  $3x$  at  $X = 9$ .

ANSWER---1.(80)    2.(402)    3.(0)    4.(2847)

9.

**TOSS-UP LITERATURE**

His upbringing in the Cumberland mountain region of Tennessee is evident in his first two novels The Morning Watch and Letters to Father Flye. His most well known novel was left unfinished at his death but still managed to win a Pulitzer Prize for Fiction. For ten points name this author who told the story of the Follet family in his novel A Death in the Family.

ANSWER---(James Agee)

9.

**BONUS LITERATURE**

Eugene O'Neill has won the Pulitzer Prize for Drama four times. Name the four plays of his which have won.

ANSWER---(Beyond the Horizon, Strange Interlude, Anna Christie and Long Day's Journey Into Night)

10.

**TOSS-UP SCIENCE**

With a specific heat of 4,184 joules per kilogram per degree Kelvin, it has the highest specific heat of any common liquid except ammonia. For ten points name this universal solvent whose scientific name is dihydrogen monoxide.

ANSWER---(Water)

10.

**BONUS SCIENCE**

You are given a rigid 5 liter container filled with an unknown gas held in by a piston.

1. If the gas is at twenty-seven degrees Celsius and exerts a pressure of six atmospheres, how many moles of gas do you have in terms of the gas constant.
2. If the piston is lowered at constant temperature so that the volume is halved, what is the new pressure.
3. If the molecular weight of the gas is 44 atomic mass units, what is the weight of the gas in the cylinder in terms of the gas constant.
4. If the gas consists only of carbons and hydrogens, what is the molecular formula.

ANSWER----1.(1/R moles) 2.(12 atmospheres) 3.(4.4/R grams) 4.(C<sub>3</sub>H<sub>8</sub> [Propane])

## Half-Time

11.

**TOSS-UP MATH**

Given a triangle with sides A and B of lengths a and b respectively and angle A equals c degrees, then solve for angle B in terms of a, b and c.

ANSWER----(B equals the inverse sine of the quantity b times the sine of c divided by a)

$$[b = \sin^{-1}((b \cdot \sin c)/a)]$$

11.

**BONUS MATH**

Give the range of each of the following functions.

1. Y equals the arcsine of X.
2. Y equals the arctangent of X.
3. Y equals the arccosine of X.
4. Y equals the cotangent of X.

ANSWER----1.(Y is greater than or equal to negative pi over 2 and less than or equal to pi over 2)

2.(Y is greater than negative pi over 2 and less than pi over 2)

3.(Y is greater than or equal to 0 and less than or equal to pi)

4.(Y is greater than 0 and less than pi)

12.

**TOSS-UP LITERATURE**

He wrote an account of a Jewish girl who rejects her upbringing in order to break into show business in his novel Marjorie Morningstar. He created the Henry family which he followed through the horrors of Hitler and Mussolini in his books The Winds of War and War and Remembrance. For ten points name this author.

ANSWER----(Herman Wouk)

12.

**BONUS LITERATURE**

Given a novel you tell me the city in which it is set.

1. Main Street.
2. A Death in the Family.
3. The House of the Seven Gables.
4. The Age of Innocence.

ANSWER----1.(Gopher Prairie) 2.(Knoxville) 3.(Salem) 4.(New York City)

**13.**

**TOSS-UP SCIENCE**

He entered the work force at twelve, selling papers on the Grand Trunk Railroad and then went on to be a hobo telegrapher several years later. His experience with the telegraph led to his invention of a stock ticker which made him a fortune and allowed him to establish a laboratory in Menlo Park. For ten points name this man whose inventions, such as the electric light, helped found the motion picture industry.

**ANSWER---(Thomas Edison)**

**13.**

**BONUS SCIENCE**

Identify the following about the right-hand rule, i.e. the rule that tells you the way to figure out the direction that an induced current will be generated in a wire moving through a magnetic field.

1. Along what finger of the right hand is the magnetic field aligned.
2. Along what finger is the motion of the wire aligned.
3. Along what finger is the induced current generated.
4. This rule is also named after this English physicist who first proposed the idea.

**ANSWER---1.(Pointer or First finger)    2.(Thumb)    3.(Middle finger)    4.(John Fleming)**

**14.**

**TOSS-UP SOCIAL STUDIES**

In 1993, in the worst case of water contamination in recent years, cryptosporidium infected over 200,000 people and caused about one hundred deaths. For ten points in what largest Wisconsin city, situated on Lake Michigan, did this outbreak occur.

**ANSWER---(Milwaukee)**

**14.**

**BONUS SOCIAL STUDIES**

For five points each name the four major volcanoes that make up the island of Hawaii.

**ANSWER---(Mauna Loa, Mauna Kea, Kilauea [kill-a-way-a] and Hualalai)**

**15.**

**BONUS FINE ARTS**

This Mannerist of tremendous energy and inventiveness, combined the qualities of both Mannerism's anticlassical and elegant phases in his works. He wanted "to paint like Titian and to design like Michelangelo." His last major work, The Last Supper, is his most spectacular and denies in almost every way the classical values of Leonardo's century earlier version. For ten points name this artist of Christ Before Pilate, whose real name was Jacopo Rubusti.

**ANSWER---(Tintoretto)**

**15.**

**BONUS FINE ARTS**

Moderator hand out the accompanying art visual aids at the end of the packet. Please identify to which style each of the following numbered works belong.

Moderator Note: The answers are also at the end of the packet.

**16.**

**TOSS-UP MISCELLANEOUS**

Its name is an acronym of the Russian for the Telegraphy Agency of the Soviet Union. Founded in 1935 and headquartered in Moscow, it was the national news agency of the Soviet Union and supplied the West with news of events in the USSR. For ten points by what four letter word is this agency known.

**ANSWER---(TASS)**

16.

**TOSS-UP MISCELLANEOUS**

Identify for what the following acronyms dealing with the submarine service stand.

1. Sonar.                    2. ELF.                    3. COB.                    4. CO.

ANSWER---1. (Sound Navigation and ranging)    2. (Extra low frequency)    3. (Chief of the Boat)  
4. (Commanding Officer)

17.

**TOSS-UP MATH**

Note to moderator: Read slowly.

Take the cube of 2, multiply it by the square of three, then triple the result you get and add 9 to it. Take the principle square root of that value, add 75 to it and then take 20% of the result. For ten points number does this give you.

ANSWER---(18)

17.

**BONUS MATH**

Moderator: hand out sheet.

This sheet has five mathematical symbols on it, tell in words what each one means.

ANSWER---1. (the Summation of)    2. (Identically equal to)    3. (Is a Proper Subset of)  
4. (Infinity)    5. (Factorial)

18.

**TOSS-UP SOCIAL STUDIES**

The first war of this type occurred after Athens and Sparta signed the Peace of Nicias in 421 BC. Both sides had several incidents which created tension on both sides and which eventually led to the renewal of fighting in 413. For ten points name this type of warfare best known during the period after WWII between the US and the Soviet Union.

ANSWER---(Cold War)

18.

**BONUS SOCIAL STUDIES**

The discovery of a huge tomb complex in Egypt housing more than fifty members of one pharaoh's royal family, is probably one of the most important archaeological finds of the century.

1. Constructed during the 13th century BC, the tomb holds more than fifty sons of this great pharaoh of the 19th dynasty whose reign supposedly included the Exodus of the Israelites from Egypt.

2. The great English poem 'Ozymandius' by what poet, is based on the life of this pharaoh.

3. This tomb along with the Temples of Thutmosis IV, Ramses IV and Queen Hatshepsut are all located in this valley that replaced the pyramids as the burial site of Egyptian pharaohs.

4. The mausoleum complex is very near to this other great discovery, the richly appointed tomb of this pharaoh that was discovered by Howard Carter in 1922.

ANSWER---1. (Ramses II)    2. (Percy Bysshe Shelley)    3. (Valley of the Kings)  
4. (Tutankhamen or Tut)

19.

**TOSS-UP LITERATURE**

His first two plays The Return of Buck Gavin and The Third Night were written while he studied at the University of North Carolina. His fame came from four semi-autobiographical works in which the author is represented by the characters Eugene Gant and George Webber. For ten points name this author of the novels You Can't Go Home Again and Look Homeward Angel.

ANSWER---(Thomas Wolfe)

19.

**BONUS LITERATURE**

Given a title name the author.

1. The Razor's Edge.                      2. Ivanhoe.                      3. Blithe Spirit.                      4. The Prisoner of Zenda.

ANSWER---1.(Somerset Maugham)                      2.(Sir Walter Scott)                      3.(Noel Coward)  
4.(Anthony Hope or Anthony Hope Hawkins)

20.

**TOSS-UP SCIENCE**

The largest one of these in the world, known as Halley's Comet, is about to go up for sale, valued at 3/4 of a million dollars. For ten points name this clear or black gem, which is one of the birthstones of October, whose most valuable type is known as fire.

ANSWER---(Opal)

20.

**BONUS SCIENCE**

Answer the following questions about solar radiation and what happens to it when it strikes the earth.

1. The atmosphere is relatively transparent to the incoming radiation and the surface absorbs it, but when it is radiated back into the atmosphere, this happens to its wavelength which causes most of it to be absorbed by the atmosphere and radiated back to the ground, thus increasing the temperature.
2. This absorption is known as the greenhouse effect and is caused mainly by this compound.
3. The greenhouse effect can also work in reverse. The detonation of a large number of nuclear weapons would create forest fires that would release large amounts of smoke which would block out the incoming solar radiation and reduce the surface temperature in a phenomenon known as this.
4. While some people still refute the idea of the greenhouse effect, it appears that it was occurring during this geologic period in which the dinosaurs died out and caused tropical conditions to extend well into the mid-latitudes.

ANSWER---1.(It increases)                      2.(Carbon dioxide [CO<sub>2</sub>])                      3.(Nuclear Winter)  
4.(Cretaceous)

21.

**TOSS-UP MATH**

What is the sum of the measures of the interior angles of a regular 16 sided polygon?

ANSWER---(2520)

21.

**BONUS MATH**

Identify for what each of the following computer related acronyms stand.

1. ASCII.                      2. IDE.                      3. I/O.                      4. CPU.

ANSWER---1.(American Standard Code for Information Interchange)  
2.(Integrated Device Electronics)                      3.(Input Output)                      4.(Central Processing Unit)

22.

**TOSS-UP SOCIAL STUDIES**

Created by the Judiciary Act of 1789, among its duties are the administration of the Department of Justice, the presentation of cases in courts on behalf of the government and the direction of the system of federal penitentiaries. For ten points name this post which provides legal advice to the President.

ANSWER---(Attorney General)

**22.**

**BONUS SOCIAL STUDIES**

Given a Supreme Court decision name the Chief Justice at the time of the decision.

1. Marbury v. Madison.
2. Plessy v. Ferguson.
3. Brown v. Board of Education.
4. Roe v. Wade.

ANSWER---1.(John Marshall)    2.(Melville Fuller)    3.(Earl Warren)    4.(Warren Burger)

**23.**

**TOSS-UP LITERATURE**

He had an affair with Simon de Beauvoir but that did not show through in his writing which was often a brutally realistic account of the Chicago slums. His most famous book won the 1950 National Book Award and told the story of Frankie Machine. For ten points who is this author of The Man with the Golden Arm.

ANSWER--(Nelson Algren)

**23.**

**BONUS LITERATURE**

Spell the following words.

1. Agnosticism.                    (A-G-N-O-S-T-I-C-I-S-M)
2. Connoisseur.                    (C-O-N-N-O-I-S-S-E-U-R)
3. Ukulele.                        (U-K-U-L-E-L-E)
4. Sophomore.                    (S-O-P-H-O-M-O-R-E)

**24.**

**TOSS-UP SCIENCE**

Always consisting of four fused rings, three with six carbons and one with five carbons, these natural products are derived from the non-glyceride portion of fats and include estrone, progesterone, cholesterol and estrogen. For ten points name these chemicals whose most well known variety, the anabolics, are used to enhance the performance of athletes.

ANSWER---(Steroids)

**24.**

**BONUS SCIENCE**

The only place that elements number three through five are made is in the interstellar clouds of low-density gas that permeate the galaxies. Name these three elements that arise from reactions of gas with cosmic rays.

ANSWER---(Lithium, Beryllium and Boron)

## *Replacement Questions*

**TOSS-UP SOCIAL STUDIES**

It discovered causes for toxic shock syndrome and Legionnaire's disease. Established during WWII it is now responsible for conducting research into the origin of diseases and developing methods for their prevention. For ten points name this agency of the US Public Health Service headquartered in Atlanta, GA.

ANSWER---(CDC or the Center for Disease Control)

**BONUS SOCIAL STUDIES**

Given a description of an amendment name the amendment.

1. Repealed Prohibition.
2. Abolished slavery.
3. Allowed the collection of income tax.
4. Prohibits unreasonable search and seizures.

ANSWER---1.(21)    2.(13)    3.(16)    4.(4)

**TOSS-UP LITERATURE**

This Quaker was nicknamed the poet laureate of abolition. When he was not writing poetry defending abolitionist causes he was writing about country life in such poems as "Telling the Bees" and "The Barefoot Boy". He is famous for a poem about being snowed in on his father's farm in Massachusetts appropriately titled "Snowbound". For ten points who is this poet of "Barbara Frietchie".

**ANSWER---(John Greenleaf Whittier)**

**BONUS LITERATURE**

I will name a literary character and you tell me the creator.

1. Della Street.                      2. Nero Wolfe.                      3. C. August Dupin.                      4. Dick Tracy.

**ANSWER---1.(Earl Stanley Gardner)    2.(Rex Stout)    3.(Edgar Alan Poe)    4.(Chester Gould)**

**TOSS-UP SCIENCE**

Members of the class Cestoda, they consist of a head called a scolex and nearly square sections of the body called proglottids. For ten points name these parasites which enter through under-cooked meat.

**ANSWER---(Tapeworms)**

**BONUS SCIENCE**

Name the three parts of the small intestine.

**ANSWER---1, 2, & 3.(Duodenum, Jejunum and Ileum)**

$\Sigma$

1.

$\equiv$

2.

$\subset$

3.

$\infty$

4.

!

5.