

ABT OPEN 1995 Round 5

Questions written and edited by
TRIAD QUESTIONS

1.

TOSS-UP SCIENCE

These cells are the only cells in the epidermis which have chloroplasts and carry on photosynthesis. Quite important since these cells function to control the size of the stomata, through which gases are exchanged in the plant. For ten points name these cells.

ANSWER---(Guard cells)

1.

BONUS SCIENCE

Answer the following questions about plants.

1. What are trees called which lose all their leaves at the end of the growing season in temperate regions.
2. What is the normal separation of a leaves from plants called.
3. Which plant hormone stimulates ripening of fruit and promotes the fall of leaves during autumn.

ANSWERS---1. (Deciduous) 2. (Abscission) 3. (Ethylene)

2.

TOSS-UP MISCELLANEOUS

He graduated from UCLA with a degree in marketing but he got the acting bug so he tried his hand at Hollywood. His first break occurred in 1983 playing a nuclear-war survivor in "Testament". His next role would be that of a gunfighter in "Silverado". For ten points name this actor who has starred in the films "No Way Out", "Field of Dreams", and "Waterworld".

ANSWER---(Kevin Costner)

2.

BONUS MISCELLANEOUS

Given a year and the school he played for name the man who won the Heisman Trophy.

1. 1993, Florida St.
2. 1992, Miami.
3. 1991, Michigan.
4. 1985, Auburn.

ANSWER---1. (Charlie Ward) 2. (Gino Torretta) 3. (Desmond Howard) 4. (Bo Jackson)

3.

TOSS-UP MATH

If the cosine of 60 degrees equals one half, then what is the cosine of the quantity 60 degrees plus 1800 degrees?

ANSWER---(1/2)

3.

BONUS MATH

Solve the following equations for x and give all possible answers from 0 to 2pi inclusive.

1. Two times the sine of X equals one.
2. 2 times the sine cubed of X plus 2 sine X times cosine squared of X equals root 3.
3. Two times the sine of 3X equals one.
4. The sine of 2X minus root 3 times cosine of 2x equals 0.

ANSWERS---1. (Pi/6 & 5pi/6) 2. (Pi/3 & 2pi/3) 3. (Pi/18 & 5pi/18) 4. (Pi/6 & 2pi/3)

4.

TOSS-UP SCIENCE

Moving at the rate of about one centimeter per year, it runs for 600 miles from the Colorado desert to northwestern California and marks the boundary between the American and Pacific crustal plates. For ten points name this fault which causes earthquakes up and down the California coast.

ANSWER---(San Andreas Fault)

4.

BONUS SCIENCE

New discoveries are constantly being made in the field of archaeology, answer the following questions about some of them.

1. In this desert located in China and Mongolia, a nest with five eggs and one embryo of a previously unknown carnivore was discovered, shedding new light on their development from infant to adult.
2. A new examination of a 2.5 million year old skull has revealed that even though it is very small, it should be known as Mr. Ples and not the previous nickname of Mrs. Ples. Name this Australopithecus species which is changing some of our ideas about human development.
3. Recent discoveries in this country that is a part of the horn of Africa include a complete Australopithecus boisei skull and numerous stone tools dated at over 2.5 million years old.
4. The discovery of an 1.5 million year old A. boisei jaw at a site in Konso-Gardula shows that this species of hominid was living near another at the same time. Name this species of the genus Homo, which came before Sapiens and means upright.

ANSWER---1.(Gobi desert) 2.(Africanus) 3.(Ethiopia) 4.(Homo Erectus)

5.

TOSS-UP FINE ARTS

According to his memoirs as dictated to Solomon Volkov, his seventh symphony was composed as a memorial for the Russian people who suffered during Stalin purges as well as a victory salute to the heroic defenders of Leningrad during World War II. For ten points name this composer of the Leningrad Symphony.

ANSWER---(Dmitri Shostakovich)

5.

BONUS FINE ARTS

Known as the Mighty Handful, this group of Russian composers, whose hero was Mikhail Glinka, wanted their music to be totally Russian as opposed to the vaguely western European tradition that was popular. For four points each name these composers of the 19th century.

ANSWER---(Cesar Cui, Alexander Borodin, Mili Balakirev, Nicolai Rimsky-Korsakov and Modest Mussorgsky)

6.

TOSS-UP LITERATURE

This story is based on the lives of two sisters, Elinor and Marianne Dashwood. Elinor falls in love with Edward Ferrars while Marianne is rejected by Willoughby and is pursued by Colonel Brandon. For ten points name this work set in Sussex and Devonshire written by Jane Austen.

ANSWER---(Sense and Sensibility)

6.

BONUS LITERATURE

I'll give you a character from a short story and you name the story.

1. Fortunato.
2. Jim Dillingham Young.
3. Ichabod Crane.

ANSWER---1.(The Cask of Amontillado) 2.(The Gift of the Magi)
3.(The Legend of Sleepy Hollow)

10.

BONUS SOCIAL STUDIES

Identify the following geological extremes in US geography.

- 1 + 2. The farthest points apart in the United States are Log Point and Kure Island which are found in what two states.
3. The city located farthest north in the US is this one in Alaska which shares its name with the Point on which it is located.
4. The farthest point north in the forty-eight contiguous states is Lake of the Woods in this state.

ANSWER---1 + 2. (Florida and Hawaii) 3. (Barrow) 4. (Minnesota)

Half-Time

11.

TOSS-UP SCIENCE

From the Greek for 'to seek', it is defined as an element whose solid phase is characterized by high thermal and electrical conductivity and which is hard, lustrous, opaque, malleable and cold to the touch. For ten points name these elements that act as cations in chemical reactions, examples of which include sodium, aluminum and titanium.

ANSWER---(Metals)

11.

BONUS SCIENCE

Answer the following questions about pollutants in the water.

1. Concentrations of this element of about 1 milligram per liter is beneficial to prevent dental cavities, but concentrations of 2 milligrams per liter cause mottling or discoloration of the teeth.
2. If this family of nitrogen compounds containing N-O-two, is present in water it will cause methemoglobinemia [meth-mo-glow-bin-e-mia], which affects infants and causes them to die of oxygen starvation, hence its more common name, 'blue baby' syndrome.
3. It can refer to metals with specific gravities higher than about four, or more often it applies to any metals that are toxic such as aluminum, arsenic, lead and mercury.
4. In general usage this 8-letter term refers to water that is somewhat salty, but technically it means water that has between 1500 and 5000 milligrams of salt per liter.

ANSWER---1. (Fluorine) 2. (Nitrites) 3. (Heavy metals) 4. (Brackish)

12.

TOSS-UP SOCIAL STUDIES

The members of her administration were known as the wets and the dries. The wets were those that disagreed with some of her more radical views and the dries were those that completely supported her. For ten points name this Conservative Prime Minister of Great Britain from 1979 to 1990.

ANSWER---(Margaret Thatcher)

12.

BONUS SOCIAL STUDIES

Moderator: Hand out visual bonus IA3.

Identify the following people in history from a picture.

ANSWER---(A-King Henry VIII, B-Queen Victoria, C-Joan of Arc or Jeanne D'Arc and D-Ulysses Grant)

13.

TOSS-UP MATH

What is the contrapositive of the statement if two angles are right angles then they congruent?

ANSWER---(If two angles are not right angles then they are not congruent)

if P, then Q

reverse the order!

13.

BONUS MATH

Answer the following questions about a regular 20 sided polygon.

1. What is the sum of its interior angles.
2. What is the measure of one of the interior angles of the polygon.
3. What is the measure of an exterior angle of the polygon.
4. What is the sum of the exterior angles of the polygon.

ANSWERS---1.(3240 degrees) 2.(162) 3.(18) 4.(360)

14.

TOSS-UP MISCELLANEOUS

His four near death experiences, the most serious being the 1981 attempted assassination by Mehmet Ali Acra have forced him to curtail his physical activities and he now prays up to seven hours a day. The death of his father during World War II led to his becoming a priest and rising to the Archbishopric of Krakow. For ten points name this Polish man who was born Karol Wojtyla.

ANSWER---(Pope John Paul II)

14.

BONUS MISCELLANEOUS

Name the five events that made up the pentathlon in the ancient Greek Olympics. Hint, all the events still occur in the modern Olympics.

ANSWER---(Javelin, Wrestling, Discus, Long Jump + Running (specifically 200 yards) or Stade)

15.

TOSS-UP LITERATURE

He started his career as a journalist but turned to writing short stories when he joined the staff of 'The New Yorker' in 1927. Later he would go on to write the books, Alarms and Diversions and The Middle-Aged Man on the Flying Trapeze. Name this author who wrote the children's story The Thirteen Clocks before he went blind, but is best remembered for the short story "The Secret Life of Walter Mitty".

ANSWER---(James Thurber)

15.

BONUS LITERATURE

Given a description name the literary term.

1. A substitution of an inoffensive word for an offensive one.
2. A form of inordinate exaggeration.
3. An imitation of natural sounds by words.
4. A comparison using like or as.

ANSWER---1.(Euphemism) 2.(Hyperbole) 3.(Onomatopoeia) 4.(Simile)

16.

TOSS-UP SCIENCE

The weaving path they make as they approach the earth from outer space has been described as like 'a drunk stumbling home from a pub'. An international project known as the Pierre Auger Project is now underway to measure the intensities of these incoming electrons and ions. For ten points name this type of high-energy ray that come from exploded stars.

ANSWER---(Cosmic rays)

16.

BONUS SCIENCE

Answer the following questions about the early history of the study of radioactivity.

1. The first people to create an artificial radioactive isotope were this daughter of Marie Curie and her husband Frederic Joliot-Curie.
2. This was done by bombarding aluminum-27 with alpha particles which yielded the 30 weight isotope of this element symbolized P.
3. This scientist who discovered the proton was also the first to transmute one element into another.
4. This was done by bombarding nitrogen-14 with alpha particles and producing this element.

ANSWER---1.(Irene Joliot-Curie) 2.(Phosphorus) 3.(Ernest Rutherford) 4.(Oxygen)

17.

TOSS-UP SOCIAL STUDIES

Founded in 1515 by the Portuguese as Casa Branca, it is now known in the Arabic world as Dar el Beida. A landing site of Allied forces during Operation Torch, it then served as a meeting site between Churchill and Roosevelt in 1943. For ten points name this Moroccan seaport which lent its name to famous movie starring Humphrey Bogart.

ANSWER---(Casablanca)

17.

BONUS SOCIAL STUDIES

Answer the following questions about the geography of the Philippines where the Bataan death march took place during World War II.

1. On what largest island of the Philippines did the march take place.
2. The march began when the Americans besieged on this island off the tip of the Bataan peninsula surrendered to the Japanese.
- 3 + 4. The Bataan peninsula where the march took place is surrounded by these two bodies of water, one of which is one of the largest seas in the world and the other is a bay named after the capital of the country.

ANSWER---1.(Luzon) 2.(Corregidor) 3 + 4.(South China Sea + Manila Bay)

18.

TOSS-UP LITERATURE

She was the youngest American and the first African-American playwright to win the Best Play Award from the New York Drama Critics' Circle. Her life was cut short by cancer leaving Robert Nemiroff to complete her autobiographical work To Be Young, Gifted and Black. For ten points name this playwright most famous for her work A Raisin in the Sun.

ANSWER---(Lorraine Hansberry)

18.

BONUS LITERATURE

Name the three Furies.

ANSWER---(Tisiphone, Alecto, and Megaera)

19.

TOSS-UP FINE ARTS

Born in 1898 in Kuortane, he graduated in 1921 from the Helsinki Polytechnic School. His professional reputation grew with his Finnish Pavilion for the 1937 Paris Exposition. He was invited to the US as a visiting professor at MIT, where he remained for eight years. While in the US he designed a striking Serpentine Plan Dormitory on the Charles River, known as the Baker House. For ten points name this Finnish architect.

ANSWER---(Alvar Henrik Aalto)

19.

BONUS FINE ARTS

Identify the artist from a description.

1. This French sculptor has two art museums named after him, one in Paris and one in Philadelphia.
2. This abstract expressionist was called "Jack the Dripper" by Time magazine.
3. Some experts believe that the lack of detail in this French Impressionist's later works was caused by his failing eye sight, although others disagree. Name this man born in Giverny.
4. This artist who lived mainly in France became the first living artist to be exhibited in the Louvre.

ANSWER—1.(Auguste Rodin) 2.(Jackson Pollock) 3.(Claude Monet) 4.(Marc Chagall)

20.

TOSS-UP MATH

Given that z equals $5 + 6i$ where i equals the square root of negative one, what is the absolute value of z in simplest terms?

ANSWER—(The square root of 61)

20.

BONUS MATH

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

1. GUI. 2. SVGA. 3. DOS. 4. CD-ROM.

ANSWER—1.(Graphical User Interface) 2.(Super Video Graphics Adapter)
3.(Disk Operating System) 4.(Compact Disc Read Only Memory)

Replacement Questions

TOSS-UP MATH

What is the simplest form of the expression tangent squared of x times secant of x times the cosecant of x times the cosine cubed of x times the sine of x ?

ANSWER—(Sine squared of x)

BONUS MATH

Given the following information determine in what quadrant each of the following are found.

1. The sine is positive and the cosine is negative.
2. The secant is negative and the tangent is positive.
3. The sine is positive and the tangent is positive.
4. The cosine is negative and the cosecant is negative.

ANSWERS—1. (II) 2. (III) 3. (I) 4. (III)

TOSS-UP SCIENCE

Formerly known as Sanduleak sixty-nine dash two hundred and two, it was located in the Large Magellanic Cloud, 170,000 light-years from earth. First sighted by Ian Shelton, its study provided much information on objects of its type. For ten points name this supernova, the first one to be sighted that year.

ANSWER—(Supernova 1987A)

BONUS SCIENCE

There are only four bodies in the solar system that are known to contain molecular oxygen in their atmospheres. Three of them are planets and one is a moon of Jupiter. For five points each name them.

ANSWER—(Earth, Mars, Venus and Europa)

TOSS-UP SOCIAL STUDIES

He advanced the field of psychology by taking it away from the branch of philosophy and establishing it among the laboratory sciences based on the experimental method. For ten points name this pioneer of pragmatism who authored Principles of Psychology.

ANSWER--(William James)

BONUS SOCIAL STUDIES

Identify the largest city by population in each of the following states.

1. Massachusetts. 2. Texas. 3. New Mexico. 4. Florida.

ANSWER---1.(Boston) 2.(Houston) 3.(Albuquerque) 4.(Jacksonville)

TOSS-UP LITERATURE

He has written mysteries under the pseudonym of Edgar Box but he is better known for his novels and plays. Some of his novels such as Lincoln and Burr probe the lives of historical figures. For ten points name this author whose first novel was Williwaw but who became more famous for his novel Myra Breckenridge.

ANSWER--(Gore Vidal)

BONUS LITERATURE

Given a book name the author.

1. All Creatures Great and Small. 2. The Alchemist. 3. Le Morte D'Arthur.
4. The Tale of Peter Rabbit.

ANSWER---1.(James Herriot) 2.(Ben Johnson) 3.(Sir Thomas Mallory) 4.(Beatrix Potter)