

## 1. Technology

This format is essentially a compression system. It takes information that is typically one hundred seventy-six kilobytes per second and removes the ninety percent which is unimportant. This allows people to transmit the information quickly and store more files. Name this type of file that is used by millions of adolescents for music.

ANSWER: MP3 (accept MPEG (Audio Layer) 3)

## 2. British Literature

Give the first and last name of the 1722 title character who does not reveal her true name because she is on the run from the law. She was sentenced to live in Virginia for stealing silk but moves back to England. This heroine was created by Daniel Defoe.

ANSWER: Moll Flanders (prompt on Moll or Flanders)

## 3. Physics (10 Seconds)

Though qualitatively the same for light and sound, which phenomenon requires separate formulas for each because of relativity? With light, it is associated with red shifts and blue shifts, and with sound it is often associated with passing objects. Name this effect which causes differences in frequency based on relative motions.

ANSWER: Doppler (Effect)

## 4. Pop Culture

Which move can only be used when you have a piece at the fifth rank and your opponent tries to pass you by moving his pawn two spaces? This chess move allows the pawn to be captured by immediately moving into the space it would have entered had it moved one space. It has a two-word French name.

ANSWER: En Passant (accept In Passing)

## 5. Religion/Mythology

What object hung on an oak tree in Colchis? Its acquisition required plowing a field with fire-breathing bulls, planting dragons' teeth, and slaying the giants who would crop up. Thanks to the help of Medea, these feats were accomplished by Jason and the Argonauts.

ANSWER: (The Golden) Fleece

## 6. United States History

This was the name of a minstrel song from the middle of the nineteenth century, not the name of an actual person. Its political use picked up at the end of the nineteenth century and beginning of the twentieth. What nickname was given to state laws that formally disenfranchised and segregated Black people?

ANSWER: (Jim) Crow

## 7. Algebra (30 Seconds)

The foci are located at (3,0) and (-3,0) for the ellipse with equation  $x^2/25 + y^2/16 = 1$ . If you take any single point on the ellipse and find the distances from that point to each focus, what will be the sum of those distances?

ANSWER: 10 (Units)

#### 8. Current Events

Your answer must be in English, but you can give either a three-letter acronym or a two-word phrase. The two-word phrase may be the most misleading name of anything in history. This region is 150 miles long, two-and-a-half miles wide, and is watched by two million soldiers. Name the area at the 38<sup>th</sup> parallel which divides North and South Korea.

ANSWER: DMZ (or Demilitarized Zone) (prompt on 38<sup>th</sup> Parallel)

#### 9. World Literature

Which 1759 novel was condemned by the City Council of Geneva and soon thereafter became a big seller throughout Europe? It takes place in Germany, Bulgaria, Holland, Portugal, Spain, Argentina, Paraguay, Surinam, France, Venice, and Proponitis. Name this work containing the characters Cunegonde and Pangloss written by Voltaire.

ANSWER: Candide(, or Optimism)

#### 10. Biology

Which type of learning was demonstrated in an experiment by Konrad Lorenz on geese? This learning typically takes place early in life and can result in a strong bond between parents and offspring.

ANSWER: Imprint(ing)

#### 11. Language Arts

Which nine-letter word refers to a temporary alliance for joint action? It has been used often by the Bush Administration in reference to actions in Iraq.

ANSWER: Coalition

#### 12. Music

(Note to moderator: 'bass' is pronounced 'base') The answer is a four-letter word. C is movable. F is usually called bass. G is usually called treble. Name the sign placed at the beginning of a musical staff to denote the range of pitches of the notes.

ANSWER: Clef

#### 13. Geometry/Trigonometry (30 Seconds)

Give your answers in radians. Find all solutions in radians between 0 and two pi for the equation: the sine of two x equals one.

ANSWER:  $\pi/4$  &  $5\pi/4$  (Radians) (must give both answers in either order)

#### 14. World History

Which empire lasted from 1413 to 1922? It peaked at the end of the seventeenth century, when it controlled most of the shore of the Mediterranean Sea. Its antagonism towards Russia led it to side with the Central Powers during World War One, which hastened its downfall. By the end, most of its citizens were Turkish.

ANSWER: (The) Ottoman (Empire)

### 15. Astronomy/Earth Science/Geography

About two hundred million years ago, its existence led to the extinction of many species. Eventually, it broke apart to form Laurasia and Gondwanaland, which in turn broke apart to form the continents pretty much as we know them today. Name the former supercontinent.

ANSWER: Pangaea

### 16. United States Literature

Which author often wrote about an aspiring writer named Nathan Zuckerman? His story collection "Goodbye Columbus" includes many portraits of Middle Class Jews. This writer's most controversial novel, written in 1969, is Portnoy's Complaint.

ANSWER: (Philip) Roth

### 17. Chemistry (30 Seconds)

(Note to moderator: Carefully pronounce 'ammonium sulfate') There are three atoms in a molecule of water. How many atoms are in a molecule of ammonium sulfate?

ANSWER: 15

### 18. Calculus/Math History (10 Seconds)

Who wrote early commentaries on the works of Diophantus, Ptolemy, and Apollonius? A great orator who drew people to Alexandria around 400 AD, she was killed by a Christian mob.

ANSWER: Hypatia

### 19. Art/Architecture

(Note to moderator: 'Munch' is pronounced Moonk.) Which famous 1893 painting shows a person on a bridge in front of a red-streaked sky? He is holding his head, and his mouth is wide open. It was painted by Norway's Edvard Munch.

ANSWER: (The) Scream (or The Cry)

### 20. Nonfiction

According to this ancient text, the five fundamental factors are moral law, heaven, earth, commander, and doctrine. Moral law refers to politics, heaven refers to weather, and earth refers to terrain. Though it was probably written in the fourth century BC, it is still considered a practical text. Name this military work by Sun Tzu.

ANSWER: (The) Art of War (accept Ping-fa)

NOTE: These questions are for breaking ties. If you need to replace a question, use the corresponding question from the Replacement packet. In a tiebreaker, the first correct answer wins the match.

### Tiebreaker #1

What was introduced into both houses of Congress every year beginning in 1923 but did not get approved by Congress until 1972? It then required ratification by states but ran into controversies regarding the deadline for state approvals and whether states could rescind their approvals. Name this proposed change to the Constitution which was a centerpiece of the feminist movement.

ANSWER: ERA (or Equal Rights Amendment)

Tiebreaker #2

What nickname is given to the major awards handed out each year by the American Theatre Wing? Often given to Broadway shows, their full name is The Antoinette Perry Awards.

ANSWER: Tony (Awards) (or Tonies)

Tiebreaker #3

Which state uses the postal abbreviation KY?

ANSWER: Kentucky