Illinois Masonic Academic Bowl

Round 2<br>1st Section Toss-up Questions

2023 State Tournament

## Question \#1: Social Studies

10 points
Based on his early war experiences, this person wrote the tactical book Infantry Attacks. This person often worked closely with Italo Gariboldi, who supported this person during Operation Sunflower. American Lloyd Fredendall [FREH-dun-dahl] was relieved from his command after being soundly defeated by this field marshal at the Battle of Kasserine [KASS-uh-rin] Pass. This person eventually committed suicide via cyanide pill to avoid a public trial following the 20 July plot. After the war, German writers promoted the reputation of the Wehrmacht [VAIR-mahkt] by pointing to this person's opposition to Adolf Hitler. Name this Nazi Germany Army leader known as "the Desert Fox".
(Johannes) Erwin (Eugen)
Rommel

## Question \#2: Mathematics

10 points

One of these things is named after an Oxford University librarian and is based on the statement "The least integer not nameable in fewer than 19 syllables." One of these things demonstrated a weakness in Gottlob Frege's [GAWT-lohb FRAY-guh'z] axiomatic laws, leading to the development of type theory and Zermelo set theory. That example of these things is based on the set of all sets that are not members of themselves, and it is named for Bertrand Russell. Another example of these things is based on a liar who says they are lying. Name these statements that appear to be self-contradictory.
paradoxes [or
paradoxical statements; accept antinomy/ies]


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## Question \#3: Literature

10 points

| In one novel by this author, Vernon Roscoe gets <br> caught up in the Teapot Dome scandal. That novel, | Upton (Beall) Sinclair <br> (Jr.) <br> which was one of several novels by this author |
| :--- | :--- |
| about the energy industry, was Oill. This author |  |
| wrote a series of novels about Irma Barnes's |  |
| husband, who gets captured by the Nazis in the |  |
| novel Dragon's Teeth, and who is named Lanny |  |
| Budd. Another novel by this author states |  |
| "Nobody rose in Packingtown by doing good work." |  |
| In that novel, this author depicted immigrants to |  |
| Chicago from Lithuania, including a protagonist |  |
| who works in the meatpacking industry. Name this |  |
| author of The Jungle. |  |

## Question \#4: Science

10 points

> This phenomenon is the prototype application of the Langevin [lanzh-vawn] equation, which has a term from Stokes' law and a probabilistic term. One equation describing this phenomenon states that mean squared displacement equals 2 times mass diffusivity times time. The concept of sedimentation equilibrium was developed by Jean Perrin [zhahn per-an] by studying this phenomenon, which allowed him to measure Avogadro's number and verify the existence of molecules. This phenomenon is named after the person who described it after seeing pollen in water. Name this phenomenon that was explained by Albert Einstein and involves seemingly random motion of suspended tiny particles.

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## Question \#5: Fine Arts

10 points
One work by this artist shows a truncated triangular trapezohedron [truh-PEE-zoh-HEE-drun] to the left of a ladder and winged child. The main character in that work by this artist is a winged woman in the lower right corner, whose head rests in her hand. In another work by this artist, one of the characters is a corpse holding up an hourglass and riding a horse. Another character in the same work by this artist has a goat's head. Those works are Melencolia I and Knight, Death and the Devil. Name this early 16th-century German painter and printmaker who made several engravings.

## Question \#6: Social Studies

10 points

| The fourth part of this Constitutional amendment | $\underline{14}$ th Amendment |
| :--- | :--- |
| states "The validity of the public debt of the |  |
| United States...shall not be questioned." The |  |
| Slaughter-House Cases weakened this amendment's |  |
| Privileges or Immunities Clause. The desegregation |  |
| of schools under the Brown v. Board of Education |  |
| decision was supported by this amendment's Equal |  |
| Protection Clause. This amendment's Citizenship |  |
| Clause overruled the Dred Scott decision. Name this |  |
| sceond of the three Reconstruction Amendments. |  |

Illinois Masonic Academic Bowl
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## Question \#7: Literature

10 points per part

| Name these mythological characters whose <br> punishments last for eternity. |  |  |  |
| :---: | :--- | :--- | :---: |
| $\mathbf{1}$ | This person who cheated death was forced to <br> repeatedly roll a boulder up a hill. | Sisyphus [SISS-ih-fuss] |  |
| $\mathbf{2}$ | This king, who tried to trick the gods into <br> eating his son, stands in a pool of water near a <br> fruit tree but is always hungry and thirsty. | Tantalus <br> [TAN-tuh-luss] |  |
| $\mathbf{3}$ | In Chinese mythology, this person either kills <br> his wife's lover or gives up while studying <br> immortality. He repeatedly chops down a <br> self-healing tree on the Moon. | Wu Gang [accept Wu <br> Kang or Wu Zhi] |  |

## Question \#8: Literature

10 points per part

| This god is sometimes called Vinayaka <br> [vee-NAH-yuh-kah], and a group of temples <br> dedicated to him are called the Ashtavinayaka <br> [ahsh-tah-vee-NAH-yah-kuh]. |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Name this god who was beheaded by his father <br> Shiva but survived because he received an <br> elephant's head. | Ganesha |
| $\mathbf{2}$ | This goddess of power is the mother of <br> Ganesha. Ganesha was protecting her when he <br> was beheaded. | Parvati [accept Uma or <br> Gauri] |
| $\mathbf{3}$ | Parvati is also the mother of this god of war. | Kartikeya [accept <br> Skanda or Kumara or <br> Murugan or Shanmugha <br> or Subrahmanya] |

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Round 2<br>2nd Section<br>Teamwork Questions

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## Question \#9: Science

10 points per part
Dental offices that administer anesthesia or sedation must have at least one of these devices, and horse racing facilities must have at least two.

| $\mathbf{1}$ | Name these portable devices that can be used <br> on people in cardiac arrest. | $\underline{\text { AEDs or automated }}$ <br> $\underline{\text { external defibrillators }}$ <br> [prompt on defibrillators] |
| :---: | :--- | :--- |
| $\mathbf{2}$ | Many AEDs store information and can give an <br> output equivalent to this test of a heart's <br> electrical activity. | $\underline{\text { EKG(s) or }}$electrocardiogram(s) <br> [accept ECG(s)] <br> $\mathbf{3}$An AED is often used to treat this condition <br> consisting of a very fast heartrate. |
| (ventricular) tachycardia <br> ["tack"-ih-KAR-dee-uh] <br> [prompt on V-tach] |  |  |

## Question \#10: Science

There are generalized, social, and separation types of disorders named for this condition.

| $\mathbf{1}$ | Name this group of disorders characterized by <br> worrying and/or nervousness. | anxiety [accept <br> anxiousness or being <br> anxious] |
| :---: | :--- | :--- |
| $\mathbf{2}$ | One type of anxiety disorder is characterized by <br> attacks described by this word. The attacks can <br> begin quickly and are characterized by disabling <br> anxiety. | panic attacks |
| $\mathbf{3}$ | Psychologists often use this type of therapy for <br> anxiety disorders and depression that involves <br> developing coping skills to address negative <br> thoughts. | cognitive behavioral <br> therapy [accept $\mathbf{\text { CBT }} ;$ <br> prompt on talk therapy] |

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## Question \#11: Social Studies

10 points per part

| Most of the Danube River delta is in Romania. |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | What city, the capital of Romania, is a little <br> north of the Danube? | Bucharest [or Bucuresti <br> [boo-koo-resht $]$ ] |
| $\mathbf{2}$ | The highest point in Romania is Moldoveanu <br> [mol-doh-VEH-noo] Peak, which is in this <br> mountain range. About half of this major range <br> is in Romania. | Carpathian Mountains or <br> Carpathians [or Carpati] |
| $\mathbf{3}$ | This city on the Black Sea coast is the oldest <br> city in Romania and the fifth-most populous. <br> This city and Navodari [nah-voh-DAH-ree] are <br> connected to the Danube River by the <br> Danube-Black Sea Canal. | Constanta <br> [kun-STAHN-suh or <br> kohn-STAHN-tsuh $]$ |

## Question \#12: Social Studies

10 points per part

| This extension of land includes the towns of <br> Barnstable [BAHRN-stuh-bul] and Falmouth <br> [FAL-muth]. |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Name this eastern part of Massachusetts. | Cape Cod |
| $\mathbf{2}$ | This scientific community in the southwest part <br> of Cape Cod includes a famous Oceanographic <br> Institution. | Woods Hole |
| $\mathbf{3}$ | This bay is west of Woods Hole and the south <br> part of Cape Cod. The city of New Bedford is <br> near this bay. | Buzzards Bay |

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## Question \#13: Mathematics

10 points per part

| This shape is an equilateral, but not necessarily <br> equiangular, quadrilateral. |  |  |  |
| :---: | :--- | :--- | :---: |
| $\mathbf{1}$ | Give this term for a parallelogram with four <br> congruent sides. | $\underline{\text { rhombus(es) [or rhombi] }}$ |  |
| $\mathbf{2}$ | Find the area of a rhombus if its sides are of <br> length 10 units and its interior angles measure <br> 45 degrees and 135 degrees. | $\mathbf{5 0}$ times the square $\underline{\text { root }}$ <br> of $\mathbf{2}$ square units [accept |  |
| $\mathbf{5 3}$ | Find the area of a rhombus if its diagonals are <br> of length 6 units and 7 units. | $\underline{\mathbf{2 1} \text { square units square units] }}$ |  |

## Question \#14: Mathematics

10 points per part

| This geometry term is the opposite of <br> "circumscribed". |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Give this term for a figure that is inside another <br> figure in such a way that they touch in as many <br> places as possible. | inscribed figure |
| $\mathbf{2}$ | If the area of a square is 36 square units, what <br> is the area of a circle inscribed in the square? | $\mathbf{9}$ pi square units [do not <br> prompt on partial answers] |
| $\mathbf{3}$ | If the height of an equilateral triangle is <br> 36 units, what is the radius of a circle inscribed <br> in the triangle? | $\underline{\mathbf{1 2} \text { units }}$ |

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## Question \#15: Science

10 points
In the past, roof slate referred to this rock, which is one of the rocks that can change into slate. One difference between this rock and mudstone is the tendency to be split along planes, which is called fissility [fih-SILL-ih-tee]. This rock, often found with sandstone or limestone, is a very common sedimentary rock. The Wheeler site with this rock in Utah contains many trilobite ["TRY-low-bite"] fossils, and Cambrian fossils are often found in this rock in the Canadian Rockies in Burgess [BUR-jess]. Name this rock which in the United States often contains kerogen, making it a source of oil.
shale

## Question \#16: Literature

10 points
One play by this writer begins with the old Jewish woman Emilia Merz celebrating Christmas with her family in 1899. That play by this author ends in 1955 after many family members have died in the Holocaust. Before writing Leopoldstadt, this person wrote a play in which one of the characters wrote the poems "The Maid of Turkey" and "The Couch of Eros". In that play by this writer, Thomasina Coverly is tutored by Septimus Hodge. In another play by this writer, a coin repeatedly lands heads-up. That play by this author features characters from Shakespeare's Hamlet. Name this playwright of Arcadia and Rosencrantz and Guildenstern Are Dead.

Illinois Masonic Academic Bowl
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## Question \#17: Miscellaneous

10 points
One of the best known participants in this sport was Conchita Cintrón [kohn-CHEE-tah seen-TROHN], who was arrested in 1949 for performing this sport in a way that only men were allowed to do. In modern times, activists claim that the European Union common agricultural policy subsidizes this sport despite claims made by the European Union. In a novel, Romero performs in this sport after being beaten up by Robert after both men are interested in Lady Brett Ashley. That novel, The Sun Also Rises, is one of several novels by Ernest Hemingway featuring this sport. Name this sport performed by matadors or toreros against large animals.
bullfighting [accept toreo before "torero"]

## Question \#18: Social Studies

10 points
After working as a Chester Bowles Asian Fellow in $\quad$ Gloria (Marie) Steinem India, this person disrupted World Youth Festivals while working indirectly for the CIA. This person then wrote "A Bunny's Tale", which was a magazine article about working for Playboy. Another prominent article by this person was "After Black Power, Women's Liberation". This person said of one of her successful ventures, "I realized as a journalist that there really was nothing for women to read that was controlled by women." That venture by this person was initially a one-off insert in New York magazine. Name this feminist who started Ms. magazine.

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## Question \#19: Science

10 points

Problems with this organelle can cause
Diamond-Blackfan anemia. A type of scanning named for these organelles takes place in their smaller subunit. Some of these organelles are attached to the inner mitochondrial
["my"-toe-KON-dree-ul] membrane. The primary purpose of the nucleolus [noo-klee-OH-luss] is to manufacture these organelles. Many of these organelles are attached to the rough endoplasmic reticulum's outer membrane. These organelles are the location where translating mRNA into protein occurs. Name these organelles that are made up largely of their namesake RNA.
ribosomes [accept
Palade granules]

## Question \#20: Literature

10 points
In one story by this writer, a woman is told that her mother never loved her even for a minute, and her sister does not like her either. That message is given by a talking monkey who likes to steal names. This writer put that story and its follow-up in the collections Blind Willow, Sleeping Woman and First Person Singular. In a novel by this writer, one woman's job is to kill men who have committed domestic violence, and she investigates the manuscript of Air Chrysalis. That novel by this author is narrated by Tengo, Ushikawa, and Aomame [ah-oh-mah-may]. Name this writer of the novel 1Q84 ["one Q eighty-four"].

Illinois Masonic Academic Bowl
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4th Section
Teamwork Questions
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## Question \#21: Social Studies

10 points per part

| Answer the following about events related to <br> Native Americans in 1832: |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Seminole leaders agreed to the Treaty of <br> Payne's Landing, leading to their eventual <br> removal through this infamous route. | Trail of Tears |
| $\mathbf{2}$ | This 1832 Supreme Court decision vacated a <br> conviction against a white person living on <br> Cherokee land. President Andrew Jackson <br> supposedly reacted by saying "John Marshall <br> has made his decision; now let him enforce it!". | Worcester v. Georgia <br> [either order; prompt on <br> Georgia] |
| $\mathbf{3}$ | The Black Hawk War ended with this battle in <br> early August near Victory, Wisconsin. Black <br> Hawk fled during this battle, which is <br> sometimes classified as a massacre. | Battle of Bad Axe [accept <br> Bad Axe Massacre] |

## Question \#22: Social Studies

| This Baptist pastor started the Moral Majority. |  |  |  |
| :---: | :--- | :--- | :---: |
| $\mathbf{1}$ | Name this pastor and conservative activist who <br> also started Liberty University, which was led <br> by his son until the son resigned while <br> embroiled in controversies in 2020. | Jerry (Laymon) Falwell <br> Sr. |  |
| $\mathbf{2}$ | Falwell funded a 1994 documentary claiming <br> that this person who was then president <br> committed murder and smuggled drugs. | (William Jefferson) "Bill" <br> Clinton [or William <br> Jefferson Blythe III] |  |
| $\mathbf{3}$ | This other pastor, who supported the Moral <br> Majority, ran in the Republican presidential <br> primaries in 1988. He finished second in the <br> Iowa Caucus, ahead of George H. W. Bush. | (Marion Gordon) "Pat" |  |
| Robertson |  |  |  |

Illinois Masonic Academic Bowl
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Round 2<br>4th Section<br>Teamwork Questions

## Question \#23: Fine Arts

10 points per part

| The title song of this musical asks "What good is <br> sitting alone in your room?" |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Name this musical set at the Kit Kat Klub in <br> Berlin. | Cabaret |
| $\mathbf{2}$ | The Emcee introduces the cabaret dancers in <br> this opening number. | "Willkommen" |
| $\mathbf{3}$ | Cabaret is one of many musicals that this <br> composer wrote with lyricist Fred Ebb. | John (Harold) Kander |

## Question \#24: Fine Arts

10 points per part

| This musical opens with the song "I Whistle a <br> Happy Tune". |  |  |  |
| :---: | :--- | :--- | :---: |
| $\mathbf{1}$ | Name this musical set in Siam. | The $\underline{\text { King and } \mathbf{I}}$ |  |
| $\mathbf{2}$ | In The King and I, Anna sings this song with <br> the children after saying "If you become a <br> teacher, by your pupils you'll be taught." | "Getting to Know You" |  |
| $\mathbf{3}$ | Rodgers and Hammerstein wrote The King and <br> I just after they wrote this musical set in | South Pacific |  |
| Polynesia. It features the songs "You've Got to <br> Be Carefully Taught" and "Bali Ha'i". |  |  |  |

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## Question \#25: Science

10 points per part

|  | property occurs in fields symbolized by a al $B$ or capital $H$. |  |
| :---: | :---: | :---: |
| 1 | Name this phenomenon often caused by unbalanced electron spins. Ends of materials with this property are often labeled as "north pole" and "south pole". | (electro)magnetism [accept (electro) magnetic] |
| 2 | In this type of magnetism, materials have no unpaired electrons and have a negative magnetic susceptibility, generally close to zero. | $\begin{aligned} & \text { diamagnetism } \\ & \text { ["DIE-uh-magnetism"] } \\ & \text { [accept diamagnetic] } \end{aligned}$ |
| 3 | This quantity equals the surface integral of the normal component of the magnetic field over a surface. This quantity is measured in webers. | magnetic flux |

## Question \#26: Science

10 points per part

| This particle was first observed in 2012 at the <br> Large Hadron [HAY-dron] Collider. |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Name this fundamental particle whose mass has <br> been used to calculate the mass of W and Z <br> bosons [BOH-zahnz]. | Higgs boson [or Higgs <br> particle] |
| $\mathbf{2}$ | W and Z bosons mediate this fundamental <br> interaction. | (electro)weak interaction <br> or (electro)weak force |
| $\mathbf{3}$ | The Higgs field is this type of field in which <br> every point in space can be assigned a <br> numerical value. Potential and temperature <br> fields are also this type of field. | $\underline{\text { scalar fields }}$ |

Illinois Masonic Academic Bowl
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Round 2<br>4th Section<br>Teamwork Questions

## Question \#27: Literature

10 points per part

| One character in this short story was raised by a <br> family who found her lying asleep in the shadow <br> of a big stone pillar. |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Name this story in which Armand Aubigny <br> [oh-bin-yee] throws his wife's possessions into a <br> bonfire. | "Désirée's Baby" |
| $\mathbf{2}$ | This author wrote "Désirée's Baby" and The <br> Awakening. | Kate Chopin <br> [shoh-PAN] [or Katherine <br> O'Flaherty] |
| $\mathbf{3}$ | This story by Chopin begins with Louise <br> Mallard being told that her husband died in a <br> railroad accident. | "The Story of an Hour" |

## Question \#28: Literature

10 points per part

| The introduction to this poem says "The Pool <br> Players. Seven at the Golden Shovel." |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Name this poem that states, "We / Left school. <br> We / Lurk late. We / Strike straight. We / <br> Sing sin. We / Thin gin. We / Jazz June. We / <br> Die soon." | "We Real Cool" |
| $\mathbf{2}$ | This Black writer, who was the Poet Laureate <br> of Illinois from 1968 to 2000, wrote "We Real <br> Cool". | Gwendolyn (Elizabeth) <br> Brooks |
| $\mathbf{3}$ | Gwendolyn Brooks also wrote this poem about <br> an "old yellow pair" "who are Mostly Good". | "The Bean Eaters" |

Illinois Masonic Academic Bowl
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Round 2<br>5th Section Toss-up Questions

## Question \#29: Mathematics

10 points
The identification of these values is the purpose of both the Grubbs test and modified Thompson Tau test. The effects of these values are minimized by the random sample consensus method. These values have a major effect on least squares fitting. Statistics are considered robust if they are not significantly affected by these values. These values are sometimes defined as those that exceed the third quartile plus 1 and a half times the interquartile range, and similarly on the low end. These values are sometimes plotted as separate points on a box plot. Give this term for values in a population that are far away from most of the data points.

## outliers

## Question \#30: Social Studies

10 points
In 2011, Yemen's Tawakkol Karman
[TAH-wahk-kawl KAR-mun] shared a Nobel Peace Prize with two women from this country. One of those women was Leymah Gbowee [LAY-muh BOH-ee], who helped end this country's civil war in 2003. The other woman from this country, who in 2006 became the first elected female head of state in Africa, was Ellen Johnson Sirleaf. Sirleaf has been succeeded by a soccer star from this country, George Weah [WEE-uh]. This country had even more deaths than its neighbors Guinea and Sierra Leone [lee-OHN] during the Ebola virus epidemic that ended in 2016. Name this country that started out as a project of the American Colonization Society, which is why its capital is named Monrovia.


Round 2<br>5th Section Toss-up Questions

## Question \#31: Science

10 points


#### Abstract

This law gives unreliable results because it is designed only for the solvent in a solution and it assumes that intermolecular forces in the pure solvent are very similar to those between the solvent and solute in the solution. In an ideal solution, the solvent obeys this law and the solute obeys Henry's law. In an ideal system, this law combines with Dalton's law of partial pressures to relate the mole fraction of a component in different phases. Name this law that sets partial pressure equal to a product of equilibrium vapor pressure times mole fraction.


Raoult's law

## Question \#32: Literature

10 points
In the beginning of this writer's memoir, he uses straws from a broom to light a curtain on fire, causing his grandmother's house to burn. This author then recounts moving to Memphis and Chicago, where he works with members of the Communist Party. In a novel by this author, the protagonist is eventually helped by the Communist lawyer Boris Max after trying to frame a Communist named Jan for the death of Mary Dalton. Mary was killed and decapitated by this author's protagonist Bigger Thomas. Name this author of Black Boy and Native Son.

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Round 2<br>Extra Section Toss-up Questions

## Extra Question \#1: Mathematics

10 points

This theorem is often proved using the boundedness theorem and Bolzano-Weierstrass [VY-ur-shtrahss] theorem, and this theorem is used to prove Rolle's [role'z] theorem. This theorem applies to mappings from a non-empty compact space to subsets of the real numbers. This theorem does not require functions to be differentiable, but the points it guarantees are either critical points or endpoints of a closed interval. Statements of this theorem can include two less than or equal signs. Name this theorem stating that under certain circumstances continuous functions must achieve both a maximum and a minimum.
extreme value theorem [prompt on EVT]

## Extra Question \#2: Social Studies

10 points

| During the last 10 days of the year, members of this <br> religion honor the dead by celebrating Frawardigan <br> [fruh-war-dee-GAHN]. The six feasts in this religion | Zoroastrianism |
| :--- | :--- |
| that do not happen on the new year are the |  |
| gahanbars [guh-HAHN-barz]. When approaching |  |
| adulthood, members of this religion are given a |  |
| sudreh [SUH-druh] and kushti [KUSH-tee], which |  |
| are a sacred shirt and cord used to remember the |  |
| creed "Good Words, Good Thoughts, and Good |  |
| Deeds." The 17 hymns attributed to the founder of |  |
| this religion are the Gathas [GAH-thuz]. Members |  |
| of this religion worship Ahura Mazda and read the |  |
| Avesta. Name this monotheistic religion that |  |
| started in what is now Iran about 3500 years ago. |  |

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## Extra Question \#3: Fine Arts

10 points
This composer's music, including "Gliding Dance of the Maidens", was used by Robert Wright and George Forrest to make the song "Stranger in Paradise". There are several other examples of this composer's music used in the musical Kismet. Much of the music is taken from this composer's opera about the husband of Yaroslavna set in the 12th century. Nikolai Rimsky-Korsakov and Alexander Glazunov [GLAH-zoo-nawff] finished that opera when this composer died in 1887. Name this Russian composer whose opera Prince Igor features the Polovetsian Dances.

Alexander (Porfiryevich) Borodin

## Extra Question \#4: Science

10 points
This molecular geometry can occur with an $s d^{2}[" \mathrm{~S}$ D two"] hybridization, though it most often occurs with the same hybridization as the tetrahedral shape, which is $s p^{3}$. This molecular geometry is exhibited in chlorate [KLOR-"ate"] anions [AN-"eye"-ahnz], phosphine [FAHSS-feen], hydronium ["hi"-DROH-nee-um], and ammonia. The difference between this shape and trigonal [TRIG-uh-nul] planar is that this shape is influenced by the existence of a lone pair, which forces this shape to be three-dimensional. Name this molecular shape based on a steric number of 4, with one lone pair and three atoms bonded to the central atom.
trigonal pyramidal geometry [prompt on partial answers]


Illinois Masonic Academic Bowl<br>2023 State Tournament

Round 2<br>Extra Section Toss-up Questions

## Extra Question \#5: Literature

10 points

| A short story by this writer ends with one man | Zadie Smith [or Sadie |
| :--- | :--- |
| holding another so that they can mop "whatever | Smith] |
| scum we have left of ourselves off the sides". That |  |
| story, set in a hotel in southern Spain, is "The Lazy |  |
| River" and is included in this author's collection |  |
| Grand Union. A novel by this author contrasts |  |
| Leah Hanwell, who falls for a scam artist, with her |  |
| more successful friend who becomes a lawyer and |  |
| marries an investment banker. Some of the conflicts |  |
| faced by Natalie Blake mirror the conflicts felt by |  |
| this writer as a successful Black woman in London. |  |
| Name this contemporary author of $N W$. |  |

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## Extra Question \#6: Science

10 points per part

| These locations exist when overtones are created. |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Name these locations on a standing wave where <br> the amplitude is minimized and is often zero. | nodes |
| $\mathbf{2}$ | If the distance between successive nodes is <br> known, the wavelength can be calculated by <br> performing this operation on the distance <br> between nodes. | doubling it or <br> multiplying it by $\mathbf{2}$ <br> [accept times $\mathbf{2}$ or <br> doubled] |
| $\mathbf{3}$ | The shapes of nodes on two-dimensional <br> surfaces are named for this German scientist <br> who found them using a violin bow. | Ernst (Florens Friedrich) <br> Chladni $[$ KLAHD-nee $]$ |

## Extra Question \#7: Science

| John Bardeen won two Nobel Prizes in Physics. |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | He shared the first prize with William Shockley <br> and Walter Brattain for developing this device. <br> It has three leads and is used in integrated <br> circuits. | (point-contact) <br> transistor $(s)$ |
| $\mathbf{2}$ | Bardeen shared the second prize with Leon <br> Cooper and John Schrieffer for a theory about <br> this phenomenon, in which there is no <br> resistance. | $\underline{\text { superconductivity }}$ <br> [accept superconducting <br> or superconductors; do <br> not prompt on partial <br> answers] |
| $\mathbf{3}$ | Bardeen's son James found an exact solution to <br> this equation. This equation uses the <br> stress-energy tensor and the cosmological <br> constant. | Einstein field equation(s) <br> [accept <br> EFE; prompt <br> partial answer] |

Illinois Masonic Academic Bowl
2023 State Tournament

Round 2<br>Extra Section<br>Teamwork Questions

## Extra Question \#8: Literature

10 points per part

| The title character of this play hates Montfleury <br> [mawn-floo-ree] because of the way Montfleury <br> once looked at a woman the title character loves. |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Name this play that begins with Christian <br> being told about Roxane. | Cyrano de Bergerac |
| $\mathbf{2}$ | This playwright wrote Cyrano de Bergerac. | Edmond (Eugène Alexis) <br> Rostand |
| $\mathbf{3}$ | Cyrano de Bergerac controls himself when <br> Christian mentions this thing, but he slaps a <br> musketeer who mentions it. | Cyrano's nose |

## Extra Question \#9: Literature

10 points per part

| The title character of this play was supposedly <br> dumped by her fiancé because she wanted him to <br> jump over a whip. |  |  |
| :---: | :--- | :--- |
| $\mathbf{1}$ | Name this play in which the daughter of a <br> count falls in love with a servant who is <br> engaged to a cook. | Miss Julie [or Fröken <br> Julie; accept Miss Julia] |
| $\mathbf{2}$ | This Swedish playwright wrote Miss Julie. | (Johan) August <br> Strindberg |
| $\mathbf{3}$ | The title character in Miss Julie claims that her <br> mother taught her to hate which type of <br> people? | men [accept males or |
| boys] |  |  |

