

**Minnesota Undergraduate Tournament 2015: My Torah Portion was an Archie Comic**  
**Questions by Rob Carson, Mike Cheyne, Andrew Hart, Gautam Kandlikar, Shan Kothari, Bernadette Spencer, Cody Voight, and special guest Ike Jose**  
**Packet 15 (Finals 2): Tossups**

1. The most successful direct rival to this organization was founded by Leopold Damrosch and his son Walter in 1878. Aaron Copland's *Connotations* was composed to commemorate this organization's move to a building that later became known as Avery Fisher Hall. In one of this organization's most controversial performances, the conductor delivered a disclaimer from the podium before an unusually slow performance of Brahms's *Piano Concerto No. 1* by (\*) Glenn Gould. In 2008, this orchestra toured North Korea. Ernest Schelling was the first conductor of this orchestra's series of Young People's Concerts, which were popularized by its longtime music director Leonard Bernstein. For 10 points, name this member of the "Big Five" American orchestras which plays its home concerts in Lincoln Center.

ANSWER: the New York Philharmonic Orchestra [or the NYPO; or the New York Philharmonic-Symphony Orchestra; or the Philharmonic-Symphony Society of New York]

2. In one appearance, this character throws a bowl of soup at a wall, switches the signs on displays of oranges and nuts, and breaks a shop window, as discovered by a character trailing him. This character claims that "reason is always reasonable" in an argument with a character whose sleeve has a suspicious bulge that this character identifies as a "spiked bracelet". This character is rarely seen without his large umbrella. In "The Flying Stars", this character secures the assistance of a man who'd initially opposed both him and Inspector (\*) Valentin in their first appearance, "The Blue Cross". In later stories, he is often assisted by the reformed jewel thief Hercule Flambeau. For 10 points, name this Catholic priest who stars in a number of detective stories by G.K. Chesterton.

ANSWER: Father Brown

3. The forward discount which perfectly offsets movements in these quantities is called the uncovered interest parity. The term 'sterilization' refers to open market operations to influence these quantities. Instability of these quantities presents a source of risk for an arbitrage strategy called the 'carry trade.' An economy cannot pursue free capital movements and an independent monetary policy if these quantities are (\*) fixed according to the Mundell-Fleming model. The 'tequila crisis' and the 'tom yum goong crisis' were events in which Mexico and Thailand had to pursue massive downward shifts in these quantities, and some countries peg these quantities against the US Dollar. For 10 points, identify these quantities which give the value of one currency in terms of another.

ANSWER: foreign exchange rates [accept forex rates]

4. This man tried to promote civilization by assembling the "Gentleman Adventurers of Fife." Enemy Presbyterians kidnapped him during the Ruthven Raid. After observing the North Berwick witch trials, he penned the tract *Daemonologie*. The failed "Spanish match" was this ruler's attempt to marry his son to Philip (\*) III's daughter. Called the "wisest fool in Christendom" by the French, he brought together leading church scholars at the Hampton Court Conference. Robert Catesby sought to destroy the House of Lords and replace this man with a more Catholic friendly monarch. Guy Fawkes' Gunpowder Plot was directed against this ruler, the son of Mary, Queen of Scots. For 10 points, name this Scottish monarch who became the first Stuart king of England.

ANSWER: James I [or James VI]

5. The *Wolbachia* strain wMelPop has been used for biological control of this disease in Australia, and Oxitec has developed genetically modified forms of this disease's vector. This disease's causative agent uses C-type lectins to enter Langerhans cells. The classical form of this disease can be distinguished from chikungunya by the absence of hepatomegaly, and joint and muscle pains give it the alternate name "breakbone fever." This disease's namesake RNA virus has (\*) five serotypes, all pathogenic. This disease can develop into a namesake shock syndrome that causes dangerously low blood pressure. This largely urban and suburban disease was formerly confined to Southeast Asia. Like yellow fever, this disease is transmitted mainly by *Aedes aegyptii*. For 10 points, name this tropical disease that can cause a namesake hemorrhagic fever.

ANSWER: dengue fever [accept breakbone fever before mentioned]

6. The documentary *False Fire* investigated an incident in which five members of this religion supposedly committed suicide. “Penetrating the Two Cosmic Extremes” is one of the five ritual exercises of this religion. The 610 Office was created in response to the increasing popularity of this religion, which was the subject of the Kilgour-Matas report. It claims that the world is now in a period of (\*) “dharma rectification”, and its teachings are centered on the principles of “truthfulness, benevolence, and forbearance”, or *zhen, shan, and ren*. Followers of this religion meditate in an attempt to achieve supernatural powers. For 10 points, name this *qigong*-based religion founded by Li Hongzhi, practitioners of which have had their organs harvested by the Chinese government.

ANSWER: Falun Gong [or Falun Dafa]

7. Fred Hoyle proposed a 7.65 mega-electron-volt resonance in a heavier element as a result of analyzing the stellar fusion of this element. The lack of a spectral line for this element distinguishes Type Ic (one c) supernova from Type Ib (one b). The most prominent spectral line in B-class stars is a spectral line due to the presence of neutral atoms of this element. This element is the heaviest that does not contribute to a star's (\*) metallicity. Stars more mass than the Sun can produce this element by cycling from carbon-12 through isotopes of carbon, nitrogen, and oxygen, before landing back on carbon-12. This element was first identified in the emission spectrum of the Sun’s chromosphere. It is fused to form beryllium, then carbon, in the triple alpha process. For 10 points, name this fusion product of hydrogen in stars.

ANSWER: helium [or He]

8. In one scene, this character replaces twenty real bills with twenty that claim to be from the “Bank of St. Farce”. In another scene, he sends a letter that mentions La Sota marrying a brother of the King of Spain and Lola Montes becoming Countess of Landsfeld. He learned to breathe underwater from the “Tonkin pirates” after leaving Mazandaran, where he built a palace for the Shah and became an expert with the “Punjab (\*) Lasso”, as revealed by a character called “the Persian”. This character plans to lie down in a coffin and “never wake up” after finishing his life’s work, *Don Juan Triumphant*. He is angered when Mademoiselle Giry is fired and Box 5 is made available to rent, and he causes a chandelier to fall during Carlotta’s performance in *Faust*. For 10 points, name this mask-wearing character who obsesses over Christine Daaé while haunting the Palais Garnier in a novel by Gaston Leroux.

ANSWER: Erik [or the Phantom of the Opera; or the Opera-Ghost; prompt on “the Angel of Music”]

9. In one painting of this scene, tiny crossbows appear in the spandrels to honor the guild of crossbowmen in Leuven that commissioned it. A busy-looking, complex version of this scene painted for the Pinacoteca Comunale di Volterra is the masterpiece of Rosso Fiorentino. An almost-complete lack of scenery and a crowd of people dressed in pale pinks and blues characterize the painting of this scene by Jacopo Pontormo. A number of visibly weeping people, including Mary of Cleophas pressing a cloth to her eyes, appear in the version of this scene by (\*) Rogier van der Weyden. A man at the top of a ladder holds a shroud in his teeth in the most famous version of this scene, painted as an altarpiece for an Antwerp church by Peter Paul Rubens. For 10 points, identify this recurring Biblical scene in which Nicodemus and Joseph of Arimathea lower the body of Christ to the ground.

ANSWER: *The* Descent from the Cross [or *The* Deposition from the Cross]

10. This country secretly killed thousands of its criminals in the “Petrus Killings” operation. Its troops beat reporter Amy Goodman during her coverage of a massacre that occurred in a cemetery outside the Motael Church. This country committed the Santa Cruz massacre and it brought in the Berkeley Mafia to provide economic advice. After the 30 (\*) September Movement in this country in 1965, its Communist party, the PKI, was blamed, paving the way for the right-wing New Order and its Pancasila ideology. It’s not Portugal, but the FRETILIN party fought for independence from this country, where General Suharto overthrew President Sukarno. For 10 points, name this Asian country which invaded neighboring East Timor.

ANSWER: Republic of Indonesia

11. This character's home is where a slip from a ladder results in the death of Elpenor. In the *Argonautica*, Jason and Medea ask this person to purify them of the murder of Absyrtus. In the *Metamorphoses*, this woman's affections are spurned by Picus in favor of his wife Canens. A lost epic describes how one of this woman's sons accidentally kills his father with a stingray's tail. Like Pasiphae, she was a daughter of Perse and Helios, though some stories instead call her a daughter of (\*) Hecate. This mother of Telegonus loved Glaucus, causing her to turn her rival Scylla into a sea-monster. Only Eurylochus abstains from following Polites into this character's palace on Aeaea, where she turns that group of Odysseus's men into swine. For 10 points, name this Greek enchantress.

ANSWER: Circe

12. A fortress outside this city was constructed after Francis I visited the site to see the rhinoceros that Albrecht Durer later drew as it disembarked from a Portuguese ship. Europe's last significant episode of the Black Death killed about 100,000 people in this city in 1720. In 1934, the King of Yugoslavia, Alexander I, was assassinated in the streets of this city. After Lucius Domitius Ahenobarbus was appointed proconsul, he sailed to this the Roman precursor to city, leading Julius Caesar to lay siege to it in 49 BCE. The ancient settlement at this city was the major western colony of the Greek city-state of (\*) Phokaia. This coastal city is guarded by a fortress, later made into a prison, called the Chateau d'If. During Roman times, it was known as Massilia. For 10 points, name this second-most populous city and chief port of France, located along the Mediterranean coast.

ANSWER: Marseille [or Marseilles; accept Massilia before "Massilia"]

13. These things are discovered by identifying three features on a radio echo-sounding record: strong reflections, echoes of constant strength, and a smooth and flat topography. A seminal paper by Andrei Kapitsa, et al. measured the extent of the largest of these things. Very rare volcanic eruptions can cause these structures to undergo a jökulhlaup (YUU-kuhl-ouiep). Avoiding contamination in an example of these structures named for Ian Whillans was achieved by using hot water (\*) drilling. The majority of these structures are located near Dome C and Ridge B, at ice divides. Though not mountains, the two best-studied examples of these structures are named Ellsworth and Vostok, the latter of which is also the deepest and largest. For 10 points, name these bodies of water that are found below glaciers on an icy continent.

ANSWER: Antarctic subglacial lakes [or Antarctic subglacial lakes]

14. An episode in this novel ends with Meme breaking both arms while winning the First Annual Tarzan Jumping Contest. This novel's protagonist laments that Cathy, the queen of cats, will only be her friend until Tuesday and wishes she could change her name to "Zeze the X". Aunt Lala gets this novel's protagonist a job at Peter Pan's Photo Finishers, where an old man kisses her. In this novel's early chapters, the protagonist buys a bicycle and learns to walk in (\*) high heels with Rachel and Lucy; later, she learns that she'll find a "home in the heart" from the "witch woman" Elenita. The first chapter of this novel describes the central family's move from an apartment on Loomis to the title location. For 10 points, name this novel composed of 44 vignettes about Esperanza Cordero, written by Sandra Cisneros.

ANSWER: *The House on Mango Street*

15. An area named for these things is home to the four sources of the Kaweah River and to Moro Rock. Many of these things collapsed due to the 1955 "Christmas Flood" causing overruns in Bull Creek and the Eel River. Members of the Boone and Crockett Club, including John C. Merriam and racist eugenicist Madison Grant, founded a "League" dedicated to "saving" these things. Along with the explorer Jedediah Smith, these things name a state park located about nine miles east of Crescent City. Humboldt County is home to many of these specific things, extreme physical examples of which include the (\*) Hyperion, the Lost Monarch, the Del Norte Titan, and the General Sherman. For 10 points, identify these huge trees that name a number of state and national parks in California.

ANSWER: giant redwoods [or Sequoia *sempervirens*; or Sequoiadendron *giganteum*; or coast(al)/California/Sierra redwoods; or giant sequoias; do not accept *Metasequoia glyptostroboides*; prompt on more general answers like "trees"]

16. In one of this man's novels, Julius Karp's liquor store is burned down by a thug named Ward Minogue. The protagonist of another of his novels refuses the advances of Zinaida Nikolaevna, the daughter of a man who he'd rescued from freezing to death despite his Black Hundreds pin. Max Mercy investigates a character created by this author who weighs the affections of Iris Lemon and Memo Paris and is (\*) shot by Harriet Bird. Frank Alpine works for the shopkeeper Morris Bober in a novel by this man, who used the Beilis blood libel trial as the basis for his novel about Yakov Bok. This author of *The Assistant* and *The Fixer* wrote a novel in which the New York Knights sign Roy Hobbs, who uses the bat "Wonderboy". For 10 points, name this Jewish author of *The Natural*.

ANSWER: Bernard Malamud

17. An irritable composer born in this country commemorated the beheading of Louis XVI with his *Requiem in C minor*. Erik Satie's *Sonatine bureaucratique* parodies a sonatina by a composer born in this country who taught John Field. That composer, who is not Carl Czerny, wrote a set of piano etudes called *Gradus ad Parnassum*. A composer born here wrote operas like *Lodoïska* and a 1797 *Médée* revived by Maria Callas. Friedrich Grützmacher altered the (\*) *Cello Concerto No. 9* of one composer from this country who is more famous for a minuet from his *String Quintet in E major*. Another composer from here included concerti for various groups of instruments in *L'Estro Armonico* and evoked a storm in "Summer" from *The Four Seasons*. For 10 points, name this home country of Muzio Clementi, Luigi Cherubini, and Antonio Vivaldi.

ANSWER: Italy

18. This character reacts to another character saying the word "three" by kicking at a plant while shouting "You're making me beat up grass!" In his first appearance, he mockingly says "It's not cool to ask for help! Walk by yourself!" while observing a baby, before telling another character to stop drinking from a fountain. This character develops a plan involving the theft of a security band, a (\*) prosthetic leg, and a quarnex battery. This creator of the Hadron Enforcer crashes the *Warbird* into the *Dark Aster* at a climactic point of a fight that eventually ends with him crying while holding a broken twig. Sean Gunn did most of the motion capture for this character, who was voiced by Bradley Cooper. For 10 points, name this companion of Groot, a member of the Guardians of the Galaxy who is an anthropomorphic raccoon.

ANSWER: Rocket Raccoon [or Subject: 89P13]

19. An incorrect hypothesis that the partition function could never describe these events was disproven by Rudolf Peierls, who showed that one of them occurs in the two-dimensional Ising model. At the point where one of these events occurs, a power law showing the asymptotic behavior of a physical quantity takes the form of the reduced temperature raised to the critical exponent. The breaking of symmetries during these events gives rise to their (\*) order parameters; first-order events of this type are those that involve latent heat. The Clausius-Clapeyron equation gives the slope of the tangents of the coexistence curve for the "discontinuous" examples of these events. For 10 points, name these transformations of a material from one state of matter to another, such as the freezing of water.

ANSWER: phase transitions [or phase changes; or phase transformations; accept other equivalents including "phase"; prompt on partial answers]

20. Wrangling over who would get this position was the subject of the presidential quote "Clear it with Sidney," referring to union leader Sidney Hillman. The so-called "Second Missouri Compromise" led to the successful replacement of a man in this position, replacing a person who gave the "Century of the Common Man" speech with a protégé of Boss Tom Pendergast. A Texan known as "Cactus Jack" claimed this post was (\*) "not worth a bucket of warm piss." After serving as Speaker of the House, John Nance Garner took this position in 1933, while Henry Wallace held it from 1941 to 1945 when he was replaced after the 1944 election. For 10 points, name this position held by Harry Truman during the fourth term of Franklin Roosevelt.

ANSWER: The Vice-President of the United States

TB. Semiconductors described by this term are so highly-doped that their properties are more like a metal than semiconductor. An interval described by this term contains only a single real number, that is, it's bounds are the same. In the Zeeman effect for a hydrogen atom, a magnetic field splits four states described by this term with a magnitude of two-thirds times the Bohr magneton times  $B$ . In the hydrogen atom, there are  $(*) n^2$  orbitals for each energy level that are described by this term. Matter described by this term supported by a namesake "pressure" is found in white dwarfs and neutron stars. For 10 points, name this term applied to states that are measured to have the same energy.

ANSWER: degenerate [or degeneracy]

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**Packet 15 (Finals 2): Bonuses**

1. This ruler's "twelve suggestions" included one stating that three years of mourning should always be observed for the death of a mother. For 10 points each:

[10] Name this ruler, the consort of Gaozong. Under her self-proclaimed "Zhou dynasty," she was empress of China roughly from 690 to 705.

ANSWER: Empress Wu Zetian [or Wu Zhao]

[10] Empress Wu's reign interrupted this powerful Chinese dynasty, whose first ruler was Gaozu. Falling in 907, it is noted for its poetry and for being devastated by the An Lushan rebellion.

ANSWER: Tang Dynasty

[10] This beloved consort of Tang Emperor Xuanzong, one of China's Four Beauties, was strangled by the emperor's attendant after his guards insisted she be killed. The guards blamed An Lushan's rebellion on her family.

ANSWER: Yang Guifei [or Yang Yuhuan; or Taizhen]

2. The Liver of Piacenza unusually doesn't contain the name of Sethlans, the Etruscan god of this domain. For 10 points each:

[10] Identify this domain, whose Caananite god Kothar-wa-Khasis created two clubs for Ba'al. Gods who have this role, like Hephaestus and Vulcan, often make tools and weapons at their forges.

ANSWER: blacksmiths [or smithing gods, or other synonymous equivalents; prompt on "craftsmen" or similar]

[10] In the *Kalevala*, this Finnish smith-god builds himself a golden wife who disappoints him. More famously, Vainamoinen asks him to craft the Sampo for Louhi.

ANSWER: Seppo Ilmarinen

[10] This master smith appears in various sagas and Germanic legends, one of which details his capture by the evil king Nidhad. In the Volsung saga, he is said to have forged the sword Gram.

ANSWER: Wayland the Smith [or Volundr]

3. Answer the following about the War of the Ancients and the Moderns, for 10 points each.

[10] "Moderns" like Marivaux and Perrault were opposed by "Ancients" like this French playwright, known for adhering to the three unities in such neoclassical tragedies as *Andromaque*, *Athalie*, and *Phedre*.

ANSWER: Jean Racine [or Jean-Baptiste Racine]

[10] The quarrel was revived in England by this author's satire *The Battle of the Books*, which he published as the preface to his *A Tale of a Tub*.

ANSWER: Jonathan Swift

[10] Like his idol Johann Joachim Winckelmann, this German dramatist and art critic avidly took the side of the "ancients". His works include the aesthetic text *Laocoon* and plays like *Minna von Barnhelm* and *Nathan the Wise*.

ANSWER: Gotthold Ephraim Lessing

4. Answer the following about crystal structures, for 10 points each.

[10] For trigonal and hexagonal crystals, one typically uses the Miller-Bravais system to specify crystal planes. How many indices are required to do so?

ANSWER: four

[10] What two elements each form a separate face-centered cubic lattice that interpenetrates the other in the rock-salt crystal lattice? The mineral halite contains these two elements in that lattice arrangement.

ANSWER: sodium and chloride [or Na and Cl]

[10] How many atoms are in a face-centered cubic unit cell?

ANSWER: four [or fourteen]

5. This director adapted Heinrich Böll's *The Lost Honour of Katharina Blum* with her husband Volker Schlöndorff. For 10 points each:

[10] Name this German director of *Sisters, or the Balance of Happiness*; *Marianne and Juliane*; and *Three Sisters*.

ANSWER: Margarethe **von Trotta**

[10] Von Trotta's relationship with her mother is mirrored in the psychic bond between the title siblings of her film *Sisters*, which has been compared to this Swedish director's *Persona*. He also directed *The Seventh Seal*.

ANSWER: Ingmar **Bergman** [or Ernst Ingmar **Bergman**]

[10] *Marianne and Juliane*, the second film in von Trotta's unplanned "Sisters" trilogy, won the Golden Lion at this Italian film festival. She was the first woman to receive the award since Leni Riefenstahl.

ANSWER: **Venice** Film Festival [or **Venice** International Film Festival; or Biennale di **Venezia**; or Mostra Internazionale d'Arte Cinematografica della Biennale di **Venezia**]

6. This sense requires input from the vestibular system of the ear, and like hearing, it can be disrupted by Ménière's syndrome. For 10 points each:

[10] Name this sense which keeps humans and other animals from falling over. It involves being able to sense the position of one's line of gravity relative to the base of support.

ANSWER: **balance** [or **equilibrioception**; accept word forms]

[10] An important component of the sense of balance is the movement of endolymph in these three round structures in the bony labyrinth of the inner ear.

ANSWER: **semicircular canals**

[10] Two sac-like organs in the vertebrate inner ear sense horizontal and vertical acceleration using hair cells that detect motion of calcium carbonate crystals called otoconia in the otolithic membrane. Name either organ.

ANSWER: **utricle** or **sacculle** [accept either]

7. The winner of this battle was found guilty of war crimes by a 2010 tribunal featuring Samuel Alito and Ruth Bader Ginsburg. For 10 points each:

[10] Name this battle fought on Saint Crispin's Day. Longbow-wielding archers proved to be crucial in destroying the absent Charles VI's army.

ANSWER: Battle of **Agincourt**

[10] The Battle of Agincourt was part of this extremely long war basically between England and France. It ran from 1337 to 1453.

ANSWER: **Hundred Years'** War

[10] A few years after his triumph at Agincourt, Henry V married Catherine of Valois and this treaty, signed in a French city in 1420, established that Henry's heirs would inherit the French throne.

ANSWER: Treaty of **Troves**

8. This man wrote a piece in which children sing "Mary had a little lamb, her father shot it dead" as they dismember a toy lamb, after which four giant spinning tops join the children on an E-flat major chord. For 10 points each:

[10] Name this British composer of *A Celtic Requiem* who incorporated Eastern Orthodox funeral rites into *Song for Athene*. He also wrote *The Lamb* and the cantata *The Whale*.

ANSWER: John Kenneth **Tavener**

[10] Steven Isserlis requested Tavener to write *The Protecting Veil* for this instrument and string orchestra.

Jacqueline du Pré popularized Edward Elgar's concerto for this instrument, which is an octave below the viola.

ANSWER: violon**cello**

[10] Du Pré was a student of this Russian cellist, a frequent collaborator of composers like Shostakovich, Prokofiev, and Britten. He directed the National Symphony Orchestra from 1977 to 1994.

ANSWER: Mstislav Leopoldovich "Slava" **Rostropovich**

9. The plot of this play is set in motion by a chance meeting in an alehouse called the Three Pigeons. For 10 points each:

[10] Identify this play in which Kate Hardcastle plays the role of a barmaid in order to get to know her fiancé, Charles Marlow.

ANSWER: **She Stoops to Conquer**

[10] *She Stoops to Conquer* was written by this eighteenth-century Anglo-Irish author of the novel *The Vicar of Wakefield*.

ANSWER: Oliver **Goldsmith**

[10] This extremely popular character from *She Stoops to Conquer* arranges the ruse and also helps his despised fiancée Constance Neville elope with Hastings. John O’Keeffe wrote a sequel about him “in Town”.

ANSWER: **Tony Lumpkin** [accept either underlined portion; or **Tony Lumpkin in Town**]

10. This group included the moderately controversial line “making love in the afternoon” in a song about a variably faithful woman who is accused of “breaking my heart and shaking my confidence daily”. For 10 points each:

[10] Name this folk duo whose aforementioned song “Cecilia”, like “Keep the Customer Satisfied” and “The Boxer”, appeared on their 1970 album *Bridge over Troubled Water*.

ANSWER: **Simon & Garfunkel**

[10] A sequel to Simon & Garfunkel’s “Cecilia”, also called “Cecilia”, was released in 1999 by this Swedish band, who are broadly similar to but not the same as ABBA. Their nonuple-platinum debut album, *Happy Nation*, includes their biggest hit, “The Sign”.

ANSWER: **Ace of Base**

[10] The entirely unrelated song “Cecilia and the Satellite” was released in 2014 by this artist, the former lead singer of both Something Corporate and Jack’s Mannequin. He now performs as himself “in the Wilderness”.

ANSWER: Andrew **McMahon** [or **Andrew McMahon in the Wilderness**]

11. Shortly before his death, this man mused that he wished he had written Gray’s “Elegy Written in a Country Churchyard.” For 10 points each:

[10] Name this British officer who was killed in a 1759 battle that also claimed his French opposite number, the Marquis de Montcalm. He took three musket balls at that battle and was subsequently honored as a British hero.

ANSWER: James **Wolfe**

[10] Wolfe’s death at the Plains of Abraham was part of this conflict, the American phase of the Seven Years War. The British claimed much of Canada in this war, which exacerbated tensions leading up to the American Revolution.

ANSWER: The **French and Indian** War

[10] In 1758, Wolfe participated in a successful siege of this fort in modern day Nova Scotia, using it as a staging point for the siege of Quebec. Located on Cape Breton Island, this fort’s capture marked the end of French control of Atlantic Canada.

ANSWER: **Louisbourg**

12. The charges and locations of the “point” variety of these structures can be described using Kroger-Vink notation. For 10 points each:

[10] Name these deviations from the periodic structure of a crystal.

ANSWER: crystallographic **defects** [or **crystal defects**]

[10] In ionic crystals, vacancies are formed in a point defect named for this man. He developed the classical formula stating the interaction energy between a point charge and a flat metal surface.

ANSWER: Walter [Hermann] **Schottky**

[10] Neutron radiation can cause cascading crystal defects in an “effect” named for this Hungarian-American physicist and physical chemist, who proposed a namesake “friend” as an extension to the Schrodinger’s cat thought experiment.

ANSWER: Eugene Paul **Wigner** [or **Wigner** Jenő Pal]



13. Miracles attributed to this man include his use of a handful of dust to blind enemies at the battle of Badr and his completion of the Isra and the Mi'raj, which make up the Night Journey. For 10 points each:

[10] Name this prophet whose greatest miracle, according to Muslims, was when Allah, through the angel Jibril, revealed to him the text of the Qur'an.

ANSWER: **Muhammad** [or Abu al-Qasim **Muhammad** ibn 'Abd Allah ibn 'Abd al-Muttalib ibn Hashim]

[10] Surah 54 of the Qur'an is the source of a miracle attributed to Muhammad in which he split this object so that Mount Nur became visible between its two halves. Surah 54's name, "Al-Qamar", is Arabic for this object.

ANSWER: the **moon** [or **Luna**]

[10] In another of Muhammad's miracles, he stopped one of these objects from crying, which it had begun doing when he started using a pulpit to deliver sermons. Toubah is one of these objects that grows in Jannah, or heaven.

ANSWER: a date-palm **tree** [or a date-**palm**]

14. A 1961 book about these places includes the essay "Notes on the Tinkering Trade" and describes them as "total institutions", while Michel Foucault critiqued them for blending the goals of "curing" and "confining" in *Madness and Civilization*. For 10 points each:

[10] Identify these places, many American examples of which were established thanks to the 19th-century campaigns of Dorothea Dix.

ANSWER: mental **asylums** [or **mental hospitals**; or **psychiatric hospitals/wards**; or lunatic **asylums**; or other obvious synonyms]

[10] The aforementioned 1961 book, *Asylums*, was written by this Canadian sociologist who developed his theory of "dramaturgical analysis" of behavior in his book *The Presentation of Self in Everyday Life*.

ANSWER: Erving **Goffman**

[10] This man employed several healthy confederates to feign auditory hallucinations in order to be admitted to mental hospitals in an experiment later published in *Science* under the title "On Being Sane in Insane Places".

ANSWER: David **Rosenhan**

15. This poem describes "a peculiar slant / of memory that intrudes on the dreaming model / in the silence of the studio" shortly after the memorable passage "The balloon pops, the attention / turns dully away." For 10 points each:

[10] Name this title poem of a Pulitzer-winning 1976 collection. It includes several quotes from Vasari and the image of "the right hand / bigger than the head, thrust at the viewer".

ANSWER: "**Self-Portrait in a Convex Mirror**"

[10] "Self-Portrait in a Convex Mirror" is probably the most famous work of this New York school poet, who also wrote *Hotel Lautreamont* and the Henry Darger-inspired *Girls on the Run*.

ANSWER: John **Ashbery** [or John Lawrence **Ashbery**]

[10] John Ashbery is not to be confused with John Berryman, a confessional poet whose writings include a long "homage" to this female colonial American poet of *The Tenth Muse Lately Sprung Up in America*.

ANSWER: Anne **Bradstreet** [or "Homage to Mistress **Bradstreet**"]

16. This essay considers phrases like "George IV wished to know whether Scott was the author of *Waverley*" and "the present King of France is bald" to resolve the problems of negative existentials. For 10 points each:

[10] Name this 1905 essay, originally published in *Mind*, that responded to the ideas of Alexius Meinong and Gottlob Frege by introducing the theory of definite descriptions.

ANSWER: "**On Denoting**"

[10] "On Denoting" was written by this delightful British philosopher, who wrote "In Praise of Idleness" and "Why I Am Not a Christian". He and Alfred North Whitehead collaborated on *Principia Mathematica*.

ANSWER: Bertrand **Russell** [or Bertrand Arthur William **Russell**, 3rd Earl Russell]

[10] This fellow English philosopher, the author of *The Bounds of Sense*, responded to "On Denoting" in his essay "On Referring". His son Galen, also a philosopher, wrote "Against Narrativity".

ANSWER: P.F. **Strawson** [or Peter Frederick **Strawson**]

17. The man who coined this term wrote a novel in which Kurtz from *Heart of Darkness* is brought to life during a plague of “sturnusemia”. For 10 points each:

[10] Name this literary genre that includes Timothy Findley’s aforementioned *Headhunter* and Robertson Davies’s *Deptford Trilogy*. Its name refers to a stylistic similarity to authors like Faulkner and Flannery O’Connor, but with a more Canadian sensibility.

ANSWER: **Southern Ontario Gothic** [prompt on “**Gothic**”; do not accept “Southern Gothic”]

[10] Probably the most famous Southern Ontario Gothic author is this woman, whose works in the genre include *The Robber Bride* and *The Blind Assassin*. You may know her better for her dystopian novel *The Handmaid’s Tale*.

ANSWER: Margaret **Atwood** [or Margaret Eleanor **Atwood**]

[10] Atwood’s more straightforwardly sci-fi works include this postapocalyptic novel narrated by Jimmy, or “Snowman”. Its two sequels are *The Year of the Flood* and *Maddaddam*.

ANSWER: **Oryx and Crake**

18. In finite element analysis, these polynomials allow one to construct interpolation functions when the field variable and its derivatives are specified at the nodes. For 10 points each:

[10] Name this set of orthogonal polynomials that appears in solutions to the quantum harmonic oscillator and which can be written in terms of the Laguerre polynomials.

ANSWER: **Hermite** polynomials

[10] Hermite also names complex square matrices that are equal to their own transpose when this operation is applied to the entries. For a complex number, this operation changes the sign of the imaginary part.

ANSWER: complex **conjugate**

[10] In physics, the Hermitian transpose operation is often represented by a dagger, but this symbol is commonly used in mathematics. It’s also commonly used to denote the complex conjugate and convolution.

ANSWER: **star** [or **asterisk**]

19. The engineer John Fox Burgoyne offered key recommendations during this event. For 10 points each:

[10] Name this siege carried out for almost a year against Russian defenses at a strategically located city. The battles of Balaklava and Inkerman were part of this siege which ended shortly after the Malakoff redoubt fell.

ANSWER: Siege of **Sevastopol**

[10] The siege of Sevastopol was a key event in this 1850s war, in which Russia lost to an alliance of opponents including France, Britain, and the Ottomans.

ANSWER: **Crimean** War

[10] This Frenchman led the attack on the Malakoff redoubt, saying “Here I am; here I stay!” when asked to pull back. This general later put down the Paris Commune revolt and served as President.

ANSWER: Patrice de **Mac Mahon** [or the **First Duke of Magenta**]

20. The Heidelberg School in Australia produced many impressionist works in this genre, which was also the favored subject matter of the Four Wangs and the rest of the Chinese *shan shui* tradition. For 10 points each:

[10] Identify this genre of painting which was popularized in England by, among others, John Constable, whose works in the form include *Wivenhoe Park*, *Dedham Vale*, and many other depictions of the Suffolk area.

ANSWER: **landscape** paintings [or **landscape** art]

[10] This member of the Hudson River School made many trips to the Arctic and South America, resulting in such landscapes as *Aurora Borealis*, *The Icebergs*, *Cotopaxi*, and *The Heart of the Andes*.

ANSWER: Frederic Edwin **Church**

[10] This member of the Danube school created one of the first pure landscapes in oil, his 1520 *Landscape with Footbridge*. The contemporaneous “world landscape” style influenced his famous *Battle of Alexander at Issus*.

ANSWER: Albrecht **Altdorfer**

Extra. The title character of this story is mocked for his cowardice in the face of a wounded lion by his wife Margot, who, it is implied, has an affair with their guide Robert Wilson. For 10 points each:

[10] Name this short story about an African big-game safari. It ends shortly after Margot “accidentally” shoots the title character in the head, just as the latter kills a charging buffalo.

ANSWER: “The **Short Happy Life of Francis Macomber**”

[10] “The Short Happy Life of Francis Macomber” was written by this American author, a big fan of polydactyl cats who wrote the novels *The Sun Also Rises* and *The Old Man and the Sea*.

ANSWER: Ernest **Hemingway** [or Ernest Miller **Hemingway**]

[10] Hemingway wrote the Macomber story while channeling his own bitterness in the wake of a monthlong safari he took with his wife Pauline Pfeiffer, which he chronicled in this 1935 book.

ANSWER: *The **Green Hills of Africa***