

Prison Bowl VII

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Round 02 – Tossups

1. A 22q11 deletion or DISC1 disruption can predispose individuals to this disorder, which was once called dementia praecox. Those affected lack smooth pursuit and exhibit poor mental flexibility to shifting patterns on the Wisconsin Card Sorting Test. It's not autism, but the "refrigerator mother" is a debunked theory of its occurrence. Haldol, Thorazine, and clozapine are commonly used to treat this disorder, which can manifest negative symptoms, such as flat affect and waxy flexibility, and positive symptoms, such as delusions and hallucinations. For 10 points, name this disorder with catatonic and paranoid types, which misleadingly means "split mind" in Greek.

ANSWER: schizophrenia <MZ>

2. During World War I, one person with this surname sent out pamphlets entitled *Appeal for Enlistment* to his countrymen to encourage recruitment to the British Army. Another person of this surname oversaw Operation Smiling Buddha and the controversial Operation Bluestar. Yet another person of this surname was killed in a suicide bombing by the Tamil Tigers, and the death of that person's mother had caused massive anti-Sikh violence. For 10 points, give this surname shared by two leaders of the Congress Party of India, and the leader of the *satyagraha*.

ANSWER: Gandhi <JL>

3. The third movement of this work opens with a dialogue between English horn and oboe which both jump intervals to represent a *ranz des vaches*. This symphony's first movement "Reveries - Passions" introduces a recurring theme and its final movement includes a *dies irae* motif which is continually interrupted by the strings. In the fourth movement of this symphony, string pizzicati represent a rolling head after a solo clarinet plays an *idée fixe*. That movement is "March to the Scaffold," which is followed by a "Dream of a Witches' Sabbath". For 10 points, name this five-movement symphony by Hector Berlioz.

ANSWER: Symphonie Fantastique [or Fantastic Symphony] <BM>

4. This quantity equals negative one times the partial derivative of chemical energy with respect to number of electrons, and its derivative is negative hardness. It is proportional to the square root of the covalent radius times actual nuclear charge minus a screening constant determined by Slater's rules. Due to d-block contraction, gallium and germanium have higher values of it than aluminum. The mean of electron affinity and first ionization energy is Mulliken's formulation of this quantity that increases across a period and up a group. Its greatest value on the Pauling scale, 4.0, is assigned to fluorine. For 10 points, name this tendency of an atom to attract electrons.

ANSWER: electronegativity [accept Mulliken electronegativity or Allred-Rochow electronegativity] <SH>

5. This writer created a king torn between life and death as argued by his wives Marie and Marguerite, who acts as midwife to a birth process when the king accepts his death. That character from *Exit the King* shares his name with another of this writer's characters who shouts, "I'm not capitulating!". In a play by this man, after the Fire Chief leaves, the Smiths and the Martins' dinner devolves into non-sequiturs. This playwright imagined fascism as an epidemic of transformations into a certain horned animal that nearly overwhelms Berenger. For 10 points, name this Romanian Absurdist playwright of *The Bald Soprano* and *Rhinoceros*.

ANSWER: Eugene Ionesco <AM>

6. In a speech before Parliament, this philosopher argued that the natural revulsion to death and a rapid execution makes capital punishment an effective deterrent and a humane punishment. He recognized restrictions of liberty as those of offense, paternalism, moralism, or the harm principle. This man argued that anyone who has read poetry and played push-pin would judge the former as a more fulfilling and valuable pursuit. He invoked a hierarchy of pleasures to counter the "swine philosophy" of Jeremy Bentham, who had proposed a more simplistic greatest-happiness principle. For 10 points, name this British philosopher, the author of *On Liberty* and *Utilitarianism*.

ANSWER: John Stuart Mill <MZ>

7. The NK model is a “landscape” of this concept, in which evolving populations tend to climb to local maxima. Haplodiploidy may contribute to the development of eusociality under the inclusive theory of this concept which holds that it can be increased by altruism. It is measured by the selection coefficient, and genetic load is the percentage difference between the ideal and mean values of this quantity denoted w . This quantity is zero for ligers, mules, and other sterile animals, and natural selection favors the survival of individuals with higher levels of it. For 10 points, name this concept that describes an individual’s ability to survive and reproduce in an environment.

ANSWER: **fitness** <AT>

8. This architect designed a building inspired by Chicago’s Aqua located on 8 Spruce Street in New York City, his Beekman Tower. Associated with the Santa Monica School, he included a variety of colors such as deep red and a “shimmering purple” in a museum meant to resemble an exploding guitar, his Experience Music Project. This architect of a building meant to evoke imagery of two moving people, the Dancing House in Prague, is famous for the curved reflective sheets of metal that cover his buildings. For 10 points, name this Canadian architect of the Walt Disney Concert Hall in Los Angeles and Guggenheim Museum in Bilbao.

ANSWER: Frank **Gehry** <AT>

9. The Basic Treaty acknowledged the realities of life after this structure was built. A standoff occurred here when Lucius Clay ordered tanks to it. President Kennedy publicly opposed it but privately said, “it is a hell of a lot better than a war.” Peter Fechter was shot and killed here, and wooden crosses near Checkpoint Charlie commemorate its victims. It was built in response to Eastern European migration into Western Europe and was demolished in 1989. For 10 points, name this structure in the formerly divided capital of Germany that President Ronald Reagan demanded that Mr. Gorbachev “tear down.”

ANSWER: **Berlin Wall** <JL>

10. A member of this profession advises stuffing people full of “facts” to give them a sense of motion without moving. Transported by Salamanders, they program an eight-legged morphine-injecting machine, the Mechanical Hound. A dandelion fails to rub off on the chin of one of these people, who meets Clarisse McClellan. A ventilation grill hides one member’s contraband, which must be destroyed within 24 hours. Phoenix helmets with the numbers 451, and kerosene hoses are used by this profession, whose members include Captain Beatty and Guy Montag. For 10 points, name this profession that specializes in burning books, featured in *Fahrenheit 451*.

ANSWER: **firemen** [prompt on **book-burners**] <MZ>

11. This phenomenon’s namesake “darkening” and “brightening” occur when a star rotates at high speeds, and gives stars an oblate spheroid shape. Its carriers are theorized to have coherent states detectable by instruments like LIGO. A research team in China controversially discovered that the speed of this force exceeds the speed of light. Considered the curvature in of spacetime in general relativity, an inverse-square law was proposed for the strength of this force by Isaac Newton. For ten points, name this force, which on Earth yields an acceleration of 9.8 meters per second squared perpendicular to the ground.

ANSWER: **gravity** <AM>

12. The Persian version of this ritual involves an elaborate *sofreh*, or floor spread, and the Shinto version involves three sips of sake. Seven steps are taken around a fire in the Hindu version of this ritual. In China, its traditions include combing hair four times, eating *tangyuan*, and being carried on a red sedan. *Mitzvah tantz* is performed during the Jewish celebration of this event, which involves a *ketubah*. That event takes place under a *chuppah* symbolizing the building of a hospitable home under God, and is concluded with the breaking of glass. For 10 points, name this ceremony during which a veil traditionally hides the face of the bride.

ANSWER: **wedding** [accept **marrying**, **aghd**, **vivaah samskar**, **saptapadi**, **kekkon shiki**, **hunli**, or **nissuin**] <MZ>

13. One novel about this country concerns the finding of a dead body by Jacobus, which is then exhumed by a flood and given a proper burial by Mehring. Melanie Isaacs is seduced by the English professor David Lurie in this country, the setting of *The Conservationist* and *Disgrace*. A novel from this country sees a letter from Theophilus bring a priest back home, where he discovers that his son, Absalom Kumalo, has murdered Arthur Jarvis. Nadine Gordimer and J. M. Coetzee are from this country. For 10 points, name this country, the setting of Alan Paton’s *Cry, The Beloved Country* and Athol Fugard’s critiques of apartheid.

ANSWER: **South Africa** <ZP>

14. In 2003, the Eleventh Circuit upheld this action in *Evans v. Stevens*, preferring “happen to exist” to “happen to arise.” The Roberts Court took on a narrower third question on this action, with Elena Kagan noting that “this is not the horse and buggy era anymore” as this action is now used to circumvent “congressional intransigence” in the January arguments for *NLRB v. Noel Canning*. In November, Harry Reid used the nuclear option to prohibit filibustering of most of these. Including cabinet secretaries and federal judges and subject to the “advice and consent” of the Senate, for 10 points, name this action in which federal officers are chosen by the executive.

ANSWER: **presidential appointments** [accept word forms; accept **recess appointments**, **executive appointments**, anything that includes the **President** or **executive appointing** or **filling executive, judicial, or federal posts, offices**, and clear equivalents; prompt on partial] <SH>

15. One artist from this country painted a portrait featuring a man with a reddish face who holds his drink toward the viewer. Another painter from it depicted a woman weighing pearls on a small scale and the rear view of a man teaching a woman how to play the piano. More famous paintings by artists from this country include ones which use primary colors to fill in grid-like designs and one where a man in a fur hat and coat holds hands with a woman in a long green dress. For 10 points, give this country where De Stijl (“The Style”) originated, home to artists such as Frans Hals, Jan Vermeer, and Vincent Van Gogh.

ANSWER: The **Netherlands** [accept **Holland** or **Dutch**] <AT>

16. Any natural number can be written uniquely as a sum of nonconsecutive ones of these numbers by Zeckendorf’s theorem. The worst-case runtime of the Euclidean algorithm is for a consecutive pair of these. Three of these numbers cannot form a Pythagorean triplet, and neither can the similar Lucas numbers. The ratio of each number to the previous one in this sequence approaches one plus the square root of five over two, or the golden ratio. For 10 points, give this sequence of numbers named after an Italian mathematician in which each term is the sum of the previous two terms, beginning one, one, two, three, five.

ANSWER: **Fibonacci** sequence [accept word forms] <BM>

17. This civilization’s Hanan clan was succeeded by the Hurin, and a late king of this people conquered the Aymara, Sican, and Chimara kingdoms. One ruler of this polity won a succession of victories from Ambato to Ichumbamba and this empire dissolving following the battle of Cajamarca, though a later revival was attempted by Tupac Amaru. This civilization’s records were kept on knotted ropes called *quipu* (“KEY-poo”), and used the *mita* system to recruit labor for massive road construction projects. For 10 points, name this South American empire last ruled Atahualpa, whose capital, Cuzco, was conquered by Francisco Pizarro.

ANSWER: **Inca** civilization <ZP>

18. This poet wrote, “All the clocks in the city / began to whirr and chime” in “As I Walked Out One Evening”. In a free verse poem by this poet, “everything turns away / quite leisurely” from “something amazing”, Brueghel’s fall of Icarus. “About suffering they were never wrong, the old Masters” opens that poem, “Musée des Beaux Arts”. This poet described “clever hopes” of “a dishonest decade” expiring and wrote “all I have is a voice” in a poem set in “one of the dives on Fifty-second street”. That poem declares, “we must love one another or die”. For 10 points, name this British poet of “September 1, 1939” and “Funeral Blues”, which opens, “stop all the clocks”.

ANSWER: Wystan Hugh **Auden** <KX/MZ>

19. Palamedes placed this figure in his infancy in front of a plow to prove that his father was not actually insane. His father refused an offer of twenty oxen per guest as payment for hospitality, and then the two of them teamed up to punish their family’s disloyal maids. This man sneezed loudly after his mother talked about her suitors, which she took to be a good sign. He had earlier found his disguised father in the house of the swineherd Eumaeus. Nestor’s son Peisistratus gave him a chariot and horses, and accompanied him to the court of Menelaus, where he learned about a prophecy Proteus made. For 10 points, name this son of Penelope and Odysseus.

ANSWER: **Telemachus** <PS>

20. This man wrote that Senators should be 30 years old and a citizen for 9 years in his *A Manual of Parliamentary Practice*. This author of *A Summary View of the Rights of British America* was tutored by George Wythe in law. Tobias Lear and William Eaton ended a conflict against Karamanli during his presidency by capturing Tripoli. In response to the Chesapeake-Leopard Affair, this President passed the Embargo Act to protect US neutrality. This president also wrote *Notes on the State of Virginia* and served on the House of Burgesses. For 10 points, name this third US president, the principal author of the Declaration of Independence and organizer of the Louisiana Purchase.
ANSWER: Thomas Jefferson <JL/RN>

TB. Tumor cells primarily express a dimerized embryonic M2 form of this process's final enzyme, hypothesized to be critical to the Warburg effect. In many plants, an enzyme using PP_i as a phosphate donor makes the rate-limiting step of this process reversible. That enzyme replaces phosphofructokinase-1, which, like its final enzyme, requires a magnesium cofactor. In this process, PGAL is phosphorylated as NAD⁺ is reduced. Its first step is catalyzed by hexokinase, and it occurs in the cytosol. Substrate-level phosphorylation yields 2 ATP in this process that precedes the Krebs cycle. For 10 points, name this ten-step pathway that cleaves glucose into two molecules of pyruvate.
ANSWER: glycolysis [accept Embden-Meyerhof-Parnas or EMP pathway; prompt on cellular respiration; do not accept "Entner-Doudoroff pathway"] <AT>

Round 02 – Bonuses

1. Bartholomew de las Casas protested against this Spanish system. For 10 points each:

[10] Name this system in which Spaniards were granted natives to protect and convert to Catholicism. In reality, Spaniards often used their natives for hard labour and subjected them to extreme forms of cruelty.

ANSWER: **encomienda**

[10] Slavery often happened on these Spanish “plantations” that mean “estate” in Spanish. These large land grants were given to conquistadors like Cortes, serving as the economic and social centers of life in the Americas.

ANSWER: **haciendas**

[10] Spanish holdings in the Americas were separated into these four large entities following the Bourbon Reforms. Including Rio de la Plata and New Granada, they were vested with many powers of the Crown.

ANSWER: **viceroyalties** <JL/RN>

2. Take a bite out of THESE questions! For 10 points each, identify some works of art featuring sharks.

[10] Those aquatic predators infest the turbulent sea in this Winslow Homer painting, which features a shirtless black man on a lone raft. A water spout can be seen in the far background.

ANSWER: *The **Gulf Stream***

[10] In this Copley painting, one of the title characters floats nude in a harbor while he’s attacked by a shark. His crewmates attempt to rescue him, and a harpooner prepares to strike.

ANSWER: ***Watson and the Shark***

[10] This Young British Artist submerged a shark in a formaldehyde tank in his *The Physical Impossibility of Death in the Mind of Someone Living*.

ANSWER: Damien **Hirst** <AT>

3. This phrase is spoken with an expression of “somber pride”, “ruthless terror”, and “intense and hopeless despair”. For 10 points each:

[10] Name this phrase cried out in a whisper by Kurtz. Marlowe later imagines it repeated menacingly by the dusk, but instead tells Kurtz’s fiancée that Kurtz’s final words were her name instead of this phrase.

ANSWER: “The **horror!** the horror!”

[10] This skilled sailor and writer of Polish descent wrote *Heart of Darkness*, which features a distraught Marlowe heading into the heart of the Congo in pursuit of Kurtz.

ANSWER: Joseph **Conrad** [or Josef Teodor Konrad **Korzeniowski**]

[10] The title figure of this Conrad short story is Leggatt, the narrator’s second self. Leggatt climbs aboard the narrator’s ship from the *Sephora*, and ultimately jumps overboard into a “mass of blackness”.

ANSWER: *The **Secret Sharer*** <RN/MZ>

4. For 10 points each, answer the following about the chemistry of a certain industrial process.

[10] This process developed by a German chemist produces ammonia from nitrogen and hydrogen gas.

ANSWER: **Haber**-Bosch process

[10] This process occurs between the surface of the Haber process’s metallic catalyst and molecules of nitrogen and hydrogen. Resulting ammonia molecules are still bound to the catalyst surface until this process is undone.

ANSWER: **adsorption** [do not accept “absorption”]

[10] Because there are two moles of ammonia produced for every one mole of nitrogen and three moles of hydrogen, increasing this reaction condition will shift the equilibrium to the products.

ANSWER: **pressure** <SC>

5. A “flash” one of these events happened in 2010, when the Dow Jones dropped almost 1000 points but recovered within minutes. For 10 points each:

[10] Name this general event in which stock prices decrease rapidly, followed by panic selling.

ANSWER: stock market **crash** [or stock market **fall** or reasonable clear-knowledge equivalents]

[10] During this “dark day,” the value of the Dow Jones fell some 12% as investors received margin calls and flooded the markets with cheap stocks. It would mark the end of the Roaring Twenties and usher in the Great Depression.

ANSWER: **Black Tuesday** [or **October 29, 1929**]

[10] This high tariff enacted soon after Black Tuesday helped deepen the crisis when other nations also enacted similar retaliatory tariffs in response. As a result of this tariff, international trade fell by around fifty percent.

ANSWER: **Smoot-Hawley** Tariff [or **Hawley-Smoot** Tariff; prompt on **Tariff of 1930**] <JL>

6. Answer the following about significant numbers in religion, for 10 points each.

[10] This Jewish numerological tradition assigns numbers to letters, words, and phrases. In this system, the letters of chai, meaning life, add to 18, which is therefore considered a lucky number.

ANSWER: **gematriya**

[10] This is the number of days of Creation in Genesis including resting, the number of holy virtues and deadly sins in Christianity, and the number of skies or heavens in a variety of religions including Islam.

ANSWER: **seven**

[10] The number five is important in this Indian religion as the number of virtues, thieves or sins to be avoided, men comprising the Panj Piare, and Articles of Faith that adherents must wear.

ANSWER: **Sikhism** <SH>

7. The third movement of Tchaikovsky’s fourth symphony is performed primarily in this style. For 10 points each:

[10] Name this technique of playing a stringed instrument which involves plucking the string. It contrasts with arco.

ANSWER: **pizzicato**

[10] This Hungarian composer’s eponymous pizzicato involves plucking the string so hard that it rebounds off the fingerboard. He employed it in his *String Quartet No. 4* and he also wrote *Concerto for Orchestra*.

ANSWER: Béla **Bartók**

[10] Another notable usage of pizzicato is in this composer’s two *Pizzicato Polkas*, one of which he worked on with his brother Josef. His other works include the *Tritsch-Tratsch Polka* and a number of waltzes.

ANSWER: **Johann Strauss, Jr.** [prompt on **Strauss** or **Johann Strauss**; accept equivalents] <BM>

8. In a dream, he embraces and kisses the body of a mare that was beaten to death. For 10 points each:

[10] Name this protagonist of *Crime and Punishment* who murders Alyona and Lizaveta Ivanovna.

ANSWER: Rodion Romanovich **Raskolnikov**

[10] This Russian author of *Demons* and *Crime and Punishment* described a kiss from Christ in a parable from *The Brothers Karamazov*.

ANSWER: Fyodor Mikhailovich **Dostoevsky**

[10] Raskolnikov commits murder because he thinks he is one of these people. Exemplified by Napoleon, they are distinguished from their counterparts by their right to transgress the law to fulfill their ideas.

ANSWER: **extraordinary** men [or **super**men; or **neobyknovenny**; or **ubermensch**] <MZ>

9. In this musical, Prince Fiyero advises his fellow students that they should stop studying and live the “unexamined life”. For 10 points each:

[10] Name this 2003 musical with the number “Dancing Through Life”, in which Fiyero wins the admiration of many female students, including a girl whom Boq asks to a dance. She convinces Boq to ask Nessarose instead.

ANSWER: **Wicked**

[10] This lead singer in the Broadway production of *Wicked* performed as the green-faced witch Elphaba in “Defying Gravity.” John Travolta infamously mispronounced her name at the 2014 Academy Awards.

ANSWER: Idina **Menzel** [prompt on The Wickedly Talented Adele **Dazeem**]

[10] In this 2013 Disney animated film, Idina Menzel voices Queen Elsa, who flees from her coronation when her magical powers are revealed. Elsa revels in her self-made “kingdom of isolation” in this film’s song “Let It Go.”

ANSWER: **Frozen** <KX>

10. They possess a feature called a *siphuncle*, which connects the different sections of their body and aid in motion. For 10 points each:

[10] These marine mollusks have chambered, countershaded shells. The argonaut octopus is called the “paper” one, although they belong to a different order from these pinhole-eyed cephalopods.

ANSWER: chambered nautiluses or nautili [accept Nautilidae or Nautilus pompilius]

[10] Early nautiloids emerged in the Ordovician period, during which this southern supercontinent drifted even further south towards the south pole. It contained most of Antarctica, Africa, and Australia.

ANSWER: Gondwanaland

[10] Nautilus belongs to the class Cephalopoda, which also includes squids and octopi. Many cephalopods are characterized by these appendages, which on a squid include suckers.

ANSWER: arms [or tentacles] <ZP>

11. This novel repeatedly returns to the phrase, “We crossed the river on horseback.” For 10 points each:

[10] Name this Mexican novel, a retrospective of a corrupt tycoon’s life. The second person “tu” slowly bleeds into this novel as the narrator enters his final hours.

ANSWER: *The Death of Artemio Cruz*

[10] This Mexican author of *Where the Air is Clear* introduced modernist techniques to the Boom with *The Death of Artemio Cruz*.

ANSWER: Carlos Fuentes

[10] In this sprawling novel by Fuentes, Pollo falls into the Seine and travels through the ages, witnessing the rise and fall of civilizations. Much of this novel is set around the construction of El Escorial by El Senor.

ANSWER: *Terra Nostra* <MZ>

12. This man served in high positions in the French government through four different regimes. For 10 points each:

[10] Name this French Minister of Foreign Affairs who served as chief French negotiator at the Congress of Vienna.

ANSWER: Charles Maurice de Talleyrand-Perigord

[10] Talleyrand came up with a plan to partition Belgium under this French king who came to power in the July Monarchy of 1830. He belonged to the House of Orleans and abdicated in 1848 to Napoleon III.

ANSWER: Louis-Philippe I

[10] During the negotiations at the Congress of Erfurt following the Treaty of Tilsit, Talleyrand consulted this Russian czar nightly, frustrating Napoleon’s efforts to completely isolate and destroy Austria.

ANSWER: Alexander I <JL/RN>

13. For 10 points each, name the following terms related to protein folding.

[10] A protein’s structure is determined by the sequence of these molecules with carboxyl and nitrogen-containing functional groups. Glycine is the smallest one, with a hydrogen side chain.

ANSWER: amino acids

[10] This numerical level of protein structure includes alpha helices and beta sheets formed by hydrogen bonding.

ANSWER: secondary structure

[10] These proteins aid in the folding of other proteins. One type consists of two stacked rings, each with eight subunits in humans.

ANSWER: chaperone proteins [accept chaperonins] <SH>

14. Spirituals and African-American folk music inspired this composer to write *Treemonisha*. For 10 points each:

[10] Name this African-American pianist and composer who notably popularized a certain genre of piano music. He may be best known for his piano piece *The Entertainer*.

ANSWER: Scott Joplin

[10] Joplin was known as the “King of” this type of music, which was a precursor to jazz. It’s characterized by heavily syncopated melodies and walking bass lines.

ANSWER: ragtime

[10] Joplin rose to fame with this rag named after a club in Sedalia, Missouri. It’s an example of what came to be known as “classic ragtime”.

ANSWER: *Maple Leaf Rag* <BM>

15. Cross-dressing in mythology is quite popular! For 10 points each, name some figures who did so.

[10] This Norse god of thunder reluctantly dressed up as Freyja to marry the giant Thrym, who stole this god's hammer Mjolnir.

ANSWER: Thor

[10] Cursed with impotence during the Pandavas' exile, this Hindu hero from the *Mahabharata* crossdressed as Brihannala to teach music and dance. When the curse was lifted, he took up his bow to fight the Kauravas.

ANSWER: Arjuna

[10] Thetis dressed this Greek hero as a girl and hid him on Skyros to shield him from joining the Trojan War. Odysseus recognized him as a boy after he took up a spear.

ANSWER: Achilles <MZ>

16. In this play, Martha screams after George "kills" their imaginary son. For 10 points each:

[10] Name this play featuring two married couples, Martha and George, and Nick and Honey, who play a series of ridiculous and disturbing house games.

ANSWER: Who's Afraid of Virginia Woolf?

[10] In this one-act play, Jerry goads Peter into a "fight" over a bench in Central Park. Jerry wonders, "Could I have planned all this?" after impaling himself at its end.

ANSWER: The Zoo Story

[10] This playwright of *Who's Afraid of Virginia Woolf?* and *The Zoo Story* also wrote *A Delicate Balance*, in which Harry and Edna stay over with Agnes and Tobias because they are scared of some unknown thing.

ANSWER: Edward Franklin Albee III <PS>

17. Answer these questions about the maritime provinces, for 10 points each:

[10] This province includes the traditionally-Scottish-inhabited Cape Breton Island, although its capital, Halifax, is on the mainland. French settlers from Acadia were deported from this place and it was renamed by the Brits in 1755.

ANSWER: Nova Scotia

[10] Nova Scotia is bordered to the west by this body of water, which has access to the Irving oil refinery and is located on a rift valley. St John's lies on it, and it separates most of New Brunswick from Nova Scotia.

ANSWER: Bay of Fundy [prompt on Gulf of Maine]

[10] The Bay of Fundy was originally named "French Bay" by this French explorer, who also names a large lake in upstate New York.

ANSWER: Samuel de Champlain [accept Lake Champlain] <ZP/RN>

18. Answer the following about measures used to compare the economies of different countries. For 10 points each:

[10] This term denotes the total market value of goods and services produced within a country.

ANSWER: gross domestic product or GDP [do not accept "GNP" or "GDP per capita"]

[10] This theory holds that currency exchange rates will approach the ratio of prices of identical goods and services in two countries. It can convert GDP between currencies to avoid discrepancies from fluctuating exchange rates.

ANSWER: purchasing power parity [accept PPP]

[10] The price of this corporation's core product is used by *The Economist* to calculate ideal exchange rates based on PPP. Thomas Friedman suggested that no two countries with one of these stores would go to war with each other.

ANSWER: McDonald's <SH>

19. For 10 points each, answer these questions about power laws:

[10] Power laws are unique in that they are scale-invariant, which means that they appear as this kind of curve on a log-log plot.

ANSWER: straight line [accept linear function]

[10] Inverse-square laws are also power laws. An example is this law, which describes the force between two charges as proportional to the inverse of the square of the distance between them.

ANSWER: Coulomb's law

[10] Since Coulomb's law describes a force between two particles, its associated potential will be dependent on this power of the distance between the particles.

ANSWER: negative one [accept minus one; do not accept "one"] <ZP>

20. European monarchs often sought out personal unions with other royals to expand their countries. For 10 points each:

[10] One example of such a union was the merger of these two kingdoms following the marriage of Ferdinand and Isabella in 1469. They were ruled separately, and the union dissolved temporarily following Isabella's death.

ANSWER: Castile and Aragon

[10] Sigismund II's inability to bear a child resulted in the formation of this personal union partitioned by Prussia, Austria, and Russia. Napoleon later revived a small part of it as the Grand Duchy of Warsaw.

ANSWER: Polish-Lithuanian Commonwealth [prompt on Poland; prompt on Lithuania]

[10] This personal union was created to counteract the influence of the Hanseatic League. It splintered when Gustav Vasa became king.

ANSWER: Kalmar Union <JL/RN>

TB. In this work, the Erinyes pursue a character who murders his mother Clytemnestra. For 10 points each:

[10] Name this trilogy of Greek tragedies featuring a character who avenges the death of his father Agamemnon. It includes the plays *Agamemnon*, *The Libation Bearers*, and *The Eumenides*.

ANSWER: *The Oresteia*

[10] This ancient Greek playwright wrote the *Oresteia* and is often considered the father of the tragedy. His other works include *The Persians* and *Seven Against Thebes*.

ANSWER: Aeschylus ("EHS-kuh-luhs")

[10] This Aeschylus play opens with a chorus of Danaids who flee a forced marriage to the sons of Aegyptus. The title daughters of Danaus eventually seek refuge with the Argive king Pelasgus.

ANSWER: *The Suppliants* [or *Hiketides*; or *The Suppliant Maidens*] <BM>