

2015 NSC - Official Scoresheet

Round	09	Room	
Bracket			
Reader			

Team									Team								
Player Names																	
Q#					Bonus	Steals	Ques. Total	Run. Score					Bonus	Steals	Ques. Total	Run. score	
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Player 20s																	
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Point totals																	
Final score																	
	Substitutions before Tossup 11								Substitutions before Tossup 11								
	Out:				In:				Out:				In:				
	Out:				In:				Out:				In:				

Circle winning team above. Clearly mark if game goes to OT/SD. Fill out "Point totals" row completely.
If there are substitutions, please note tossups by each player in "20s" and "10s" rows. Below is for Tab Room use only:

RH	RS	BH	BS	Left	Right	BH	BS	RH	RS
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PACE NSC 2015 - Round 09 - Tossups

1. This politician resigned from the Cabinet when the Prime Minister proposed granting extra funds to Maynooth College. This man appointed Francis Napier head of a commission investigating the conditions of crofters and cotters in the Scottish Highlands. This prime minister, who introduced the secret ballot and frequently donated his own money to rescue fallen women, seized upon Ottoman-perpetrated atrocities in Bulgaria to go on a foreign policy speech tour in his (*) "Midlothian Campaign." Despite signing the Kilmanhaim Treaty with Charles Parnell, this protege of Robert Peel was unable to secure Irish Home Rule across his four terms as Prime Minister. For 10 points, name this Liberal Prime Minister, the rival of Benjamin Disraeli.

ANSWER: William Gladstone [or William Ewart Gladstone] <Bentley>

2. On the right-hand side of this painting, a pot, a metal spoon, and a yellow knapsack are laid out in preparation for a meager lunch. The artist wrote, "You begin like one and end like the other," in reference to this painting's differently aged title figures. When this painting, which was destroyed in 1945, was exhibited at the Salon of 1850, critics attacked it for being too large given the ugliness of its characters. The bare back of one of the men in this painting can be seen through a (*) hole in his tattered overalls. A straw hat obscures the face of the older man in this painting, who uses a pickaxe to perform the title action while working to build a road. For 10 points, name this Gustave Courbet painting of two workers chipping away at rocks.

ANSWER: *The Stone Breakers* [or *Les Casseurs de pierres*] <Bentley>

3. This person's prediction that displacement squared equals six multiplied by diffusivity multiplied by time in random walks was used by Jean Perrin to measure Avogadro's number. The proportionality constants for the rates of spontaneous and stimulated emission are named for this person. This scientist showed that, as temperature goes to infinity, heat capacity goes to $3R$, if a solid is modeled as a lattice of independent (*) springs with quantized vibrations. This physicist also showed that light energy is quantized into photons in a Nobel Prize-winning description of the photoelectric effect. The fourth of his *Annus mirabilis* papers published in 1905 introduced mass-energy equivalence. For 10 points, name this German physicist who proposed that E equals m times c squared.

ANSWER: Albert Einstein <Silverman>

4. In this novel, a woman runs scalding water over the utensils used by her black maid, who eats lunch "alone like a leper." A boy in this novel is berated for supposedly eating French fries with Melvin Weiner after he lies about having diarrhea. A man in this novel recalls bathing with his frequently-constipated father, an insurance salesman. This novel ends with the question, "Now vee may perhaps to begin. Yes?" While in Connecticut, its protagonist pretends to be married to his (*) sexually adventurous girlfriend, who he nicknames "The Monkey". The title character describes his adolescent obsession with masturbation and his overbearing mother Sophie to his psychiatrist, Dr. Spielvogel. For 10 points, name this novel about the title "nice Jewish boy", by Philip Roth.

ANSWER: *Portnoy's Complaint* <Yu>

5. In reactions, metal aquo complexes act as these species. These species are in the numerator of alpha fractions. In organic chemistry, these compounds activate electrophiles like carbonyls or alkyl halides. KHP serves this role in reactions. These compounds dehydrate sugars to pure carbon. The inductive effect explains why nearby electronegative groups increase the (*) strength of these compounds. The "mineral" type of these compounds are inorganic. Ammonium chloride and ferric chloride act as these species. The strength of these compounds varies inversely with their pKas. In reactions, they are often written as "HA." For 10 points, name these compounds which accept electron pairs or donate protons to solution, the opposite of bases.

ANSWER: acids [or Lewis acids; or Bronsted-Lowry acids; or Arrhenius acids; or strong acids; or weak acids; prompt on electrophiles] <Silverman>

6. On this island, Barghash bin Said built a palace with electricity and an elevator, the House of Wonders. This island's rulers employed the ivory and slave trader Tippu Tip. With the support of the ASP Youth League, John Okello declared himself Field Marshall and massacred this island's Arabs during its 1964 revolution. Henry Rawson bombarded this island for 38 minutes before it surrendered during the shortest war in history. Like nearby (*) Mafia Island and Pemba Island, this island is called a "spice island" for its production of cloves. Until the late 19th century, this island's namesake sultanate controlled the nearby city of Mombasa. Julius Nyerere unified this island with the Republic of Tanganyika. For 10 points, name this largest island in Tanzania.

ANSWER: Zanzibar [or Unjuga] <Wang>

7. This man claimed the morality of action depends on the merit of that action's motive, which in turn depends on the action's merit, in his "circle argument." One of this man's characters pointed out the problem of infinite regress in first cause theory in his attack on the cosmological argument. This creator of Philo and Cleathes divided statements into relations of ideas and matters of fact and formulated the (*) copy principle. This man created a thought experiment that contradicted his theory that ideas are derived from impressions. This man posited a missing shade of blue and warned against deriving an "ought" from an "is" in his *Treatise of Human Nature*. For 10 points, name this author of *An Enquiry Concerning Human Understanding*, a Scottish empiricist philosopher.

ANSWER: David Hume <Gupta>

8. This initiative was motivated by the three separate setbacks its proponent learned about on a lesser-known Black Monday. This initiative prompted the vice president to hold his nose and give a thumbs down on the Senate floor. New officials called "proctors" were proposed in this initiative, which was secretly prepared by Attorney General Homer Cummings. Owen Roberts is credited with (*) defeating this initiative by choosing not to side with the so-called "Four Horsemen." Three weeks after this initiative was discussed in the ninth fireside chat, a minimum wage law in Washington was upheld in *West Coast Hotel v. Parrish* thanks to "the switch in time that saved nine." For 10 points each, identify this failed plan by Franklin D. Roosevelt to add six new Supreme Court justices.

ANSWER: Franklin Roosevelt's court-packing scheme [or Judicial Procedures Reform Bill of 1937; accept answers that convey packing the court] <Gupta>

9. This author modeled several characters on the real Father Trevor Huddleston. One character with that name is in a novel that begins with the arrest of an Indian headmaster's daughter named Prem at a library and depicts the start of the Defiance Campaign. Another novel by this author was adapted by Kurt Weill and Maxwell Anderson into the musical *Lost in the (*) Stars*. In that novel by this author, a man stays with the Harrisons and learns about his son's social justice work, which eventually leads to the farming expert Napoleon Letsitsi being sent to help Ndotsheni by James Jarvis. For 10 points, name this author of the novel *Ah, But Your Land Is Beautiful*, who wrote about a journey taken by Stephen Kumalo to Johannesburg in *Cry, the Beloved Country*.

ANSWER: Alan Paton [or Alan Stewart Paton] <Gehring>

10. Hesiod reports that the men of the Golden Age lived in the air after undergoing this action, whereas the men of the Silver Age stayed on the ground. Athena changes her mind about performing it on Tydeus when she saw him devour the brains of Melanippus. Metanira interrupts an instance of this action by stumbling upon her son Demophon inside the family hearth. This action is performed on a man who became a cicada because (*) Eos forgets to request eternal youth. Peleus interrupts the best-known instance of this action, which alternately takes the form of Thetis anointing her son with ambrosia and placing him atop a fire, or by dipping him in the river Styx. For 10 points, name this action that is nearly completely conferred upon Achilles, save for his heel.

ANSWER: mortals becoming immortal [or men becoming gods; or deification; or becoming invulnerable, accept synonyms] <Gupta>

11. Sets of these objects are classified as basic, alternative, or definitive by the Humphrey-Parkes system. These structures are found along the alar tract. Some of these objects contain thin segments called barbules organized around a rachis. Diogenes Laertius claimed that Socrates defined man as a biped without any of these objects. Three white ones appear in the heraldic symbol of the (*) prince of Wales. These objects, a prized trade good in the Aztec empire, can be cut or fitted with metal to create a nib. Recent fossil discoveries suggest that theropod dinosaurs had these features even earlier than the first discovered fossil of one on *Archaeopteryx*. For 10 points, name these biological structures which can be made into quill pens.

ANSWER: feathers [or plumes; accept plumages until "barbules"] <Jackson>

12. Rebecca Mead describes identifying with this character at age 17 in a book titled *My Life In* the novel in which this character appears. After encountering this character dressed in grey and lost in thought in front of the *Sleeping Ariadne* in the Vatican, Naumann paints a portrait of her as Santa Clara. This woman's interest in improving the cottages of nearby tenant farmers attracts the interest of James Chettam, who eventually marries her sister Celie. Her desire to help her husband research *The* (*) *Key to All Mythologies* is rebuffed, and despite being disinherited by that husband, she marries Will Ladislaw after his death. For 10 points, name this woman who comes to regret having married Reverend Edward Casaubon in George Eliot's *Middlemarch*.

ANSWER: Dorothea Brooke [accept either underlined portion] <Carson>

13. This composer's fifth symphony includes a frequently omitted part for the rare serpent instrument. He's not Hector Berlioz, but the second movement of his fourth symphony is sometimes described as a "Pilgrim's March." The four movements of this composer's A minor third symphony are all performed without a break in between. The finale of his fifth symphony begins with a solo flute quoting the chorale A (*) *Mighty Fortress Is Our God*. This composer's A major fourth symphony ends with an A minor saltarello, while his third symphony was inspired by the same trip that produced his *Hebrides Overture*. For 10 points, name this composer of the *Reformation*, *Scottish*, and *Italian* symphonies, and incidental music to *A Midsummer Night's Dream*.

ANSWER: Felix Mendelssohn [Jakob Ludwig Felix Mendelssohn Bartholdy] <Kim>

14. The run-time of this procedure is measured by k, the clearing factor. Cesium chloride is used in the isopycnic form of this procedure, enabling identification of the AT to GC base pair ratio. A buffered tissue sample may be blended to homogenize the solution before performing the "ultra" type of this technique. Ribosomal subunits are distinguished based on their values for a parameter in this technique measured in (*) Svedberg units. This step of the cell fractionation process sediments a solution into a pellet and a supernatant and is often performed at 1200 rpm. For 10 points, name this technique in which a namesake machine separates cellular components by size or density by spinning it at a high angular velocity.

ANSWER: centrifugation [or word forms such as centrifuge; prompt on spinning down; prompt on sedimentation until it is read] <Smart>

15. Chris Burden created an "Other" version of this artwork, while Diane Carlson Evans raised funds for a women's version of it. 287 additions were made to this work after its completion, and Duery Felton, Jr. organized a collection of objects left next to it. Viewers must walk down a slight grade to approach this work, whose two main components combine to form a "V" shape and are made from gabbro. The artist later created a similar sculpture for (*) Montgomery, Alabama's Civil Rights Museum. This sculpture is accompanied by Frederick Hart's *The Three Soldiers*. During its construction, a Purple Heart was thrown into the concrete foundation. For 10 points, name this Maya Lin-designed memorial to American soldiers killed in an Asian conflict.

ANSWER: Vietnam Veterans Memorial [or Vietnam Wall or Vietnam War Memorial] <Bentley>

16. One of this author's protagonists becomes a blacksmith's apprentice after his friend Heilner is expelled from the Maulbronn seminary, then later gets drunk and drowns in a river. Another of his protagonists plans to commit suicide at age fifty, but is delayed by a chance visit to the Black Eagle Tavern, where he learns to dance and meets his future lover Maria. The pressures of academia crush (*) Hans Giebenrath in one of this man's novels, while in another, a jazz saxophonist named Pablo takes the protagonist to a hall of mirrors inside the Magic Theater. The title character of another of his novels abandons his friend Govinda and falls in love with the beautiful Kamala. For 10 points, name this German author who created Harry Haller in *Steppenwolf* and wrote *Siddhartha*.

ANSWER: Hermann Hesse <Jose>

17. For a group of sets of this type in the plane, if any three of the sets intersect, then they all intersect by Helly's Theorem. Two disjoint open sets of this type can always be separated by a hyperplane. Jensen's inequality applies to functions described by this adjective, and basically states that a function's average value across inputs is greater than that function of the average of the inputs. The smallest set of this type that encloses a given set is known as that set's (*) "hull" of this type. A shape has this property if all line segments between points in it remain in the figure. A function is described by this word if its second derivative is positive. For 10 points, give this word that denotes polygons whose internal angles are all less than 180 degrees.

ANSWER: convexity [accept any word forms] <Schindler>

18. Once every twelve years in several of these structures, a ceremony is performed during which a heavenly silver wire enters a granite sculpture. Most of these structures follow an 8-by-8 or a 9-by-9 square grid plan. The inner sanctum of these places is known as the "womb chamber," and is often directly underneath a spire called the *vimana*. The term (*) *prasada* refers to both these buildings and to the refreshments served inside them after services. People remove their shoes before entering these religious structures, which contain *murtis*, or idols, of deities like Lakshmi or Ganesh. For 10 points, name these places of worship for the predominant religion in India.

ANSWER: Hindu temples [or mandirs; or prasada before mentioned; prompt on partial answer; accept Hindu after "places of worship" is read] <Gupta>

19. One event planned in this country intended to use a special cooling technology developed by the British firm Arup. Carnegie Mellon's first undergraduate branch campus opened in this country's extensive Education City. This country gave a 3.4 million dollar bribe to the daughter of Ricardo Teixeira in order to secure a 2010 (*) vote in its favor from Brazil. As many as one Nepalese migrant dies per day constructing this country's Lusail City, which is being built in preparation for an event moved to wintertime by an organization led by Sepp Blatter. The Al-Thani family rules this country where *Al Jazeera* is based. For 10 points, name this Middle East country slated to host the 2022 World Cup.

ANSWER: State of Qatar <Bentley>

20. A naval commander decided to wait twenty-seven more days before leaving this island after seeing a lunar eclipse. The hot-blooded Lamachus got his army trapped in a ditch on this island, whose defense was galvanized by Gylippus. Distracted defenders of this island were attacked during a festival to Artemis by Marcus Claudius Marcellus, whose forces were supposedly stymied by a (*) death ray made with a giant mirror and a mechanical claw that could drag entire ships out of the water. Nicias was executed at the end of a military campaign against this island planned by Alcibiades. While drawing circles, Archimedes was killed by Roman soldiers on this island. For 10 points, name this island, the target of an Athenian "expedition" that failed to capture Syracuse.

ANSWER: Sicily <Wang>

21. A family of this ethnicity gives all its jewelry to David Clancy in order to retrieve their son from customs officials in "In the Land of the Free", a story by an author of this ethnicity who was born Edith Maud Eaton. Grace and Steve take on mythological roles and eventually abandon Dale in a restaurant in a play by an author of this ethnicity who also wrote a play in which Rene Gallimard kills himself after his long-term lover reveals that he is male. The author of (*) *F.O.B.* and *M. Butterfly* is of this ethnicity, as is the author of a novel in which June, Rose, Lena, and the chess prodigy Waverly are the daughters of a quartet of *mahjong*-playing women called the Joy Luck Club. For 10 points, identify this ethnicity of Sui Sin Far ("sway" sin far), David Henry Hwang, and Amy Tan.

ANSWER: Chinese-American [or Chinese-British-American; or Chinese-British-Canadian; or Chinese-British-Canadian-American] <Carson>

22. A 1993 *History* of this topic, which rejected the rational view of it, was written by John Keegan. A frequently-read summary of this activity by a subordinate of Michel Ney named Baron Jomini was outmoded by a book which described the differences between expectations and reality as "friction." An early treatise about this thing puts "desperate ground" at the end of a list of Nine (*) Situations. The idea that this practice is "the continuation of politics by other means" was put forward in the 19th century by Carl von Clausewitz, whose writings reacted to the rise of its "total" form. The maxim "Know your enemy, and you shall know yourself" comes from a text about it. For 10 points, name this type of organized violence whose "art" was described by Sun Tzu.

ANSWER: warfare [or military operations; prompt on military strategy or military tactics] <Bentley>

23. The carpenter Joseph Arne was awarded a triumph for his role in this event. Mayor Flesselles was executed for refusing to aid this event's participants, some of whom were crushed to death trying to obtain arms from Les Invalides. Stanislas Maillard received a set of never accepted surrender terms during this event, for which artillery was wheeled in by Pierre-Augustin Hulin from the Hotel de Ville. Three days before this event, Jacques (*) Necker was dismissed as finance minister. The Marquis de Sade was transferred to an insane asylum from its location just days before this event, which liberated only seven prisoners. For 10 points, name this event, commemorated on a July 14th holiday, traditionally held to have kicked off the French Revolution.

ANSWER: storming of the Bastille [accept equivalents that involve taking the Bastille; prompt on French Revolution] <Bentley>

24. In many of these organisms, flagella are covered by lateral hairs called mastigonemes. During cytokinesis, some of these organisms form "pit connections" and "pit plugs." A grouping of these organisms receives buoyancy from gas-filled structures called pneumatocysts (emphasize the "U" sound). Chlorophyte and charophyte ones possess both the a and b forms of chlorophyll. Most heterokonts are these organisms. They produce the polysaccharide (*) agarose, and like Cyanobacteria, they can cause discolorations of water known as "blooms." They range in size from the tiny phytoplankton diatoms to the massive giant kelp. For 10 points, name these protists that come in brown, green, and red types.

ANSWER: algae [prompt on protists; prompt on phytoplankton; accept heterokonts until mentioned; accept specific types of algae, such as brown algae or green algae or red algae] <Gupta>



PACE NSC 2015 - Round 09 - Bonuses

1. In examining the sentence "Sally is a block of ice," this man argued that humans possess nonrepresentational mental capacities that don't rely on any underlying rules or principles. For 10 points each:

[10] Name this American philosopher, whose "Chinese room" thought experiment attempts to show the possibility of a system that can pass a Turing test without truly having a mind.

ANSWER: John Searle

[10] The Chinese room is an attack on the "strong" variety of this research program. This field works to create machines that possess the same capacities for thought as humans do.

ANSWER: artificial intelligence [or AI]

[10] John Lucas used theorems by this man to support his claim that machines were necessarily limited in their potential for real thought. This man's incompleteness theorems show any theory is capable of proving its consistency if and only if it is inconsistent.

ANSWER: Kurt Gödel <Bailey>

2. In the endoplasmic reticulum, the invariant chain blocks the peptide-binding cleft of this set of proteins, which is targeted by the toxic shock syndrome toxin. For 10 points each:

[10] Name these proteins expressed only on the surface of antigen-presenting cells, which interact with CD4 molecules and present exogenously-synthesized proteins to some "helper" cells.

ANSWER: MHC II [or major histocompatibility complex II; or MHC class II; or major histocompatibility complex class III]

[10] MHC class I and II proteins respectively interact with the "cytotoxic" and "helper" types of these immune cells, whose name indicates their production in the thymus.

ANSWER: T cells [or T lymphocytes]

[10] Loading of MHC Class II molecules is accomplished through this process, which is performed by dendritic cells and macrophages. In this process, cells engulf debris, particulate matter, and microorganisms up to 0.75 microns in size.

ANSWER: phagocytosis [or word forms; prompt on endocytosis] <Gupta>

3. In *The Theory of Economic Development*, this economist explained how the rush to flood the market with imitative products led to the slumps that followed booms. For 10 points each:

[10] Name this Austrian-born American economist who formulated creative destruction and analyzed the periodic fluctuations of the title entities in his work, *Business Cycles*.

ANSWER: Joseph Schumpeter [or Joseph Alois Schumpeter]

[10] Schumpeter wrote a 1942 book that compared this economic system with socialism and democracy. A book by Milton Friedman argues that the economic freedom granted by this market-based system allows political freedom.

ANSWER: capitalism [or capitalist]

[10] This law of classical economics named after a 19th century Frenchman claims that in perfect conditions, business cycle fluctuations like general unemployment or overproduction of goods should be rare because supply generates its own demand.

ANSWER: Jean-Baptiste Say's Law <Bentley>

4. John Keats's "The Eve of St. Agnes" was written in this verse form, which was likely inspired by the scheme used by Geoffrey Chaucer in *The Monk's Tale*. For 10 points each:

[10] Identify this poetic form, in which stanzas consist of eight lines of iambic pentameter followed by a single alexandrine, with the rhyme scheme a-b-a-b, b-c-b-c, c.

ANSWER: **Spenserian** stanzas

[10] As their name might suggest, Spenserian stanzas were invented by Edmund Spenser to write this epic poem dedicated to Elizabeth I. Its six extant books present various knights who allegorically embody six different virtues.

ANSWER: *The **Faerie Queene***

[10] The first book of *The Faerie Queene* centers on this knight, who is assisted by Arthur in resisting the evil Archimago and Duessa and eventually winning his love Una. He is named for the emblem on his shield, which foreshadows his later becoming St. George.

ANSWER: the **Redcrosse** Knight <Carson>

5. This composer incorporated the *furiant* dance into the scherzo of his sixth symphony. For 10 points each:

[10] Name this Czech composer of the "American" String Quartet, whose ninth symphony is subtitled "From the New World."

ANSWER: Antonin **Dvorak**

[10] In this Dvorak piece, the soloist quotes one of his songs as a tribute to his deceased sister-in-law. The theme of the first movement is introduced by clarinet and later taken up by the soloist in *quasi improvisando* fashion.

ANSWER: **Cello Concerto** in B minor

[10] After Dvorak's, the most frequently-performed cello concerto is the one in E minor by this British composer of *The Dream of Gerontius*. Another of his works includes a slow, tragic "Nimrod" movement.

ANSWER: Edward **Elgar** [that piece is *Enigma Variations*] <Rosenberg>

6. Mr. Martin, the protagonist of one of this man's short stories, imagines blowing up the office of Mrs. Barrows at F & S in part because she uses annoying phrases such as "Tearing up the pea-patch". For 10 points each:

[10] Identify this author of the short story "The Catbird Seat". His collections include *The Owl in the Attic and Other Perplexities* and *My World and Welcome to It*.

ANSWER: James **Thurber** [or James Grover **Thurber**]

[10] This Thurber short story opens with the title character imagining that he is commanding a plane during a rough storm when in fact he's just driving in his car, one of the many fantasies that title character uses to escape his boring life.

ANSWER: "The **Secret Life of Walter Mitty**"

[10] Many of Thurber's stories were published in this American magazine, which also famously published Shirley Jackson's story "The Lottery". Saul Steinberg drew *View of the World from 9th Avenue* for this magazine's cover.

ANSWER: *The **New Yorker*** <Bentley>

7. In the 18th century, this organization began publishing the journal *Philosophical Transactions* and awarding the Copley Medal. For 10 points each:

[10] Name this science-focused learned society granted a charter by King Charles II. Robert Hooke served as "curator of experiments" for this society, which greatly increased in prestige during the presidency of Isaac Newton.

ANSWER: **Royal** Society [or The President, Council, and Fellows of the **Royal** Society of London for Improving Natural Knowledge]

[10] The Royal Society approved the marine chronometer invented by this carpenter and clockmaker, whose invention solved the problem of establishing longitude at sea.

ANSWER: John **Harrison**

[10] Newton wrote a letter to Hooke in which he explained that, "if I have seen further, it is by standing on" these metaphorical things.

ANSWER: the **shoulders of giants** [prompt on **shoulders**; prompt on **giants**] <Gupta>

8. This man's mother may have poisoned her second husband, Gaius Crispus Passienus. For 10 points each:
[10] Name this Roman emperor who succeeded Claudius, a self-styled musician who allegedly fiddled during the Great Fire of Rome in 64 CE.

ANSWER: **Nero** [or **Nero** Claudius Caesar Augustus Germanicus]

[10] That mother of Nero's was the younger woman with this name. Nero tried to drown her through use of a collapsible boat on the Bay of Naples, then had his soldiers kill her when she escaped.

ANSWER: Julia **Agrippina** the Younger

[10] Agrippina was born in an army camp, owing to the fact that her father was this general. Born Nero Claudius Drusus, he received his best-known *agnomen* for retrieving the eagles lost at the Battle of Teutoburg Forest but was killed, possibly on the orders of Tiberius, in Syria at age 33.

ANSWER: **Germanicus** Julius Caesar <Bentley>

9. In the Tanakh, Mount Moriah is frequently called the "daughter" of this place. For 10 points each:

[10] Name this mountain by Jerusalem. Its name opens a lyrical hymn by Judah Halevi that is collected in a namesake set of songs expressing longing for restoration of Jerusalem. A movement of Jews seeking to return to their homeland derived its name from this toponym.

ANSWER: Mount **Zion** [or Har **Tzion**]

[10] Halevi's Zionide is sometimes categorized as one of the piyyutim, a group of Jewish liturgical poems that includes this metrical hymn chanted on Kol Nidre and beginning "Eternal master, who reigned supreme." The words of this hymn are often set to popular melodies.

ANSWER: **Adon Olam**

[10] The speaker laments, "we sat down and wept, when we remembered Zion" by the waters of this city. The Book of Ezra describes how many Jews returned to Jerusalem after the conquest of this city by Cyrus the Great.

ANSWER: **Babylon** [or **Bavel**] <Smart>

10. This composer shocked audiences with the eroticism of the "Dance of the Seven Veils" in his opera *Salome*. For 10 points each:

[10] Name this German romantic composer whose other operas include *Elektra* and *Ariadne auf Naxos*.

ANSWER: **Richard Strauss** [prompt on **Strauss**]

[10] This other opera by Strauss focuses on the love triangle between the Marschallin, her younger lover Octavian, and Sophie, all three of whom are played by female singers.

ANSWER: *Der* **Rosenkavalier** [or *The* **Knight of the Rose** or other reasonable translation]

[10] This New Zealand-born British soprano is especially acclaimed for her performances of Strauss roles, although she has also made crossovers into musical theater, such as appearing alongside Jeremy Irons in *My Fair Lady*.

ANSWER: Kiri (Janette) **Te Kanawa** [do not accept "Kanawa"] <Rosenberg>

11. The perpetrator of this action had just previously carried out the trick at Mekone, in which he tricked Zeus into choosing a pile of ox's bones covered in glistening fat. For 10 points each:

[10] Name this act that is carried out with the help of a giant fennel-stalk. Its perpetrator is chained to a rock and has his liver picked out by an eagle or vulture every day for all eternity.

ANSWER: Prometheus's **theft of fire** [or Prometheus **stealing fire**; or answers conveying that Prometheus is **taking fire**; accept the more technically correct Prometheus **taking fire back**; accept answers such as Prometheus **giving fire to humans**]

[10] Zeus further punishes humanity from benefiting from Prometheus's theft by ordering Hephaestus to mold this first woman, who releases all the evils of humanity by opening a jar or box.

ANSWER: **Pandora** [or **Anesidora**]

[10] According to Hesiod, several gods and goddesses participate in "creating" Pandora: Athena teaches her needlework, Hermes gives her the power of speech, and these goddesses of seasons and times present her with a garland crown.

ANSWER: **Horae** [or **Hours**; or **Thallo**, **Auxo** and **Carpo** in any order; or **Eunomia**, **Dike**, and **Eirene** in any order] <Gupta>

12. These medieval theater pieces were typically called "interludes" and included *The Disobedient Child* and *Everyman*. For 10 points each:

[10] Name these allegorical stage productions in which characters personifying various attributes, such as virtues and vices, try to push the protagonist towards either godliness or evil.

ANSWER: **morality** plays

[10] The title character of *Everyman* beseeches various other figures to accompany him on his journey with Death, but only succeeds when Confession offers him a "precious jewel" representing this concept, which Everyman scourges himself to acquire.

ANSWER: **Penance**

[10] Christian is variously tempted by Mr. Worldly Wiseman, Civility, and other characters representing sin on his trek from the "City of Destruction" to the "Celestial City" in this other religious allegory by John Bunyan.

ANSWER: *The **Pilgrim's Progress*** [or *The **Pilgrim's Progress** from This World to That Which Is to Come; Delivered under the Similitude of a Dream*] <Smart>

13. After observing Mars, this man helped popularize the idea that canals existed on the red planet. For 10 points each:

[10] Name this American astronomer who built an observatory in Flagstaff, Arizona that is now named after him.

ANSWER: Percival **Lowell**

[10] Lowell is best known for his search for what turned out to be this object, which was ultimately discovered by Clyde Tombaugh. In 2006, it was demoted to a dwarf planet.

ANSWER: **Pluto**

[10] In July of 2015, Pluto will be visited by this spacecraft, which will also observe Charon and other Kuiper (KIE-per) Belt objects.

ANSWER: **New Horizons** <Lee>

14. Before missiles, there was a panic over a so-called gap in these weapons after intelligence reports misread how many Bisons were present at a 1955 military exhibition in Moscow. For 10 points each:

[10] Identify these things. The so-called "Candy" or "Raisin" type of them was used in 1948 in Berlin.

ANSWER: **bombers** [prompt on **airplanes**; prompt on **warplanes**; prompt on **jets**; do not accept "fighters"]

[10] Fears about the "bomber gap" prompted the development of this aircraft. Gary Powers was exchanged for Rudolph Abel after he was shot down in one of these above Soviet airspace.

ANSWER: Lockheed **U-2** [prompt on **spy plane**]

[10] This presidential candidate warned of the non-existent "missile gap" during his successful 1960 campaign against Richard Nixon.

ANSWER: John Fitzgerald **Kennedy** [or **JFK** or Jack **Kennedy**; prompt on **Kennedy**] <Bentley>

15. Organic forms of these devices can be deposited on flexible substrates and utilize passive-matrix or active-matrix addressing. For 10 points each:

[10] Name these semiconductor devices that produce photons via spontaneous emission. Development of a blue example of these devices won Akasaki, Amano, and Nakamura the 2014 Nobel in Physics.

ANSWER: **LEDs** [or **light-emitting-diodes**]

[10] Some OLEDs (**OH-lehds**) use a thin-film form of these devices to serve as switches and amplifiers. However, you're more likely to encounter the field-effect type of these devices in your daily life.

ANSWER: **transistors**

[10] At what connection point on a MOSFET is voltage applied to create a channel, so that electrons can flow between the drain and source?

ANSWER: **gate** [or **G**] <Yu>

16. The green-beard hypothesis explains this phenomenon as the result of an allele encoding a perceptible trait that others recognize and look favorably upon. For 10 points each:

[10] Name these behaviors in which an individual decreases its own fitness to raise the fitness of another individual.

ANSWER: **altruism** [accept word forms]

[10] The idea of a green beard allele originates from a 1964 article by this evolutionary biologist, who devised a rule stating that organisms perform kin selection, a form of altruism, when the reproductive benefit they gain by doing the act multiplied by the relatedness between the two organisms outweighs the reproductive cost.

ANSWER: W. D. **Hamilton** [or William Donald **Hamilton**; or Bill **Hamilton**]

[10] The "carpenter" type of these insects engages in a suicidal form of altruism by self-destructing and leaving behind a sticky secretion to warn its colonies about predators. These insects form colonies in namesake "hills" and leave trails of formic acid.

ANSWER: **ants** <Gupta>

17. This man arises from his death bed to embrace immortality in a sculpture by Francois Rude. For 10 points each:

[10] Identify this man who was depicted on his way to conquering Italy by Jacques-Louis David.

ANSWER: **Napoleon I** [or Napoleon **Bonaparte**]

[10] This disciple of Jacques-Louis David and champion of line over color painted a portrait of Napoleon on his imperial throne. He also painted an anatomically-incorrect nude in his *Grande Odalisque*.

ANSWER: Jean-Auguste-Dominique **Ingres**

[10] In this other Ingres painting, Francis I embraces the title artist who lays dying on a bed beneath a brilliant red canopy.

ANSWER: *The **Death** of **Leonardo** da Vinci* [or *The **Death** of Leonardo da **Vinci*** or *La **Muerte** de **Leonardo** da Vinci* or *La **Muerte** de Leonardo da **Vinci***] <Bentley>

18. This author wrote about a character who is unable to fall asleep until he receives a kiss from his mother in *Jean Santeuil*. For 10 points each:

[10] Name this French author who reused that characteristic for the narrator of his lengthy novel sequence *In Search of Lost Time*.

ANSWER: Marcel **Proust** [or Valentin Louis Georges Eugène Marcel **Proust**]

[10] In this first volume of *In Search of Lost Time*, the title character develops an obsession for Odette de Crecy, whom we learn he marries in this volume's sequel *Within a Budding Grove*.

ANSWER: **Swann's Way** [or ***Du cote de chez Swann***; or *The **Way of Swann***]

[10] This fictional town based on Illiers serves as the childhood home of the character Marcel in the novel. The "overture" of "Swann's Way" is set here and is sometimes named for it.

ANSWER: **Combray** <Jose>

19. Answer the following about geographic sites sacred to some groups of aboriginal Australians, for 10 points each.

[10] This massive red sandstone formation in the Northern Territory is usually referred to now by its name in the Anangu language, rather than a name honoring a colonial secretary.

ANSWER: **Uluru** [or **Ayers Rock**]

[10] This word derived from the Wiradjuri language refers to oxbow lakes formed from rivers that changed course. The Bolin Bolin example of these places was sacred to the Wurundjeri people, and in some tales dangerous creatures called bunyips live in them.

ANSWER: **billabongs**

[10] In a 2009 paper, anthropologists such as Ray Morris traced the full path of a sacred "songline" in this part of Northern Territory jutting into the Arafura Sea, where peoples such as the Yolngu live on land declared to be an aboriginal reserve in 1931.

ANSWER: **Arnhem Land** Aboriginal Reserve <Jackson>

20. Its seven virtues included courage, honor and respect. For 10 points each:

[10] Identify this honor code followed by the forty-seven ronin when they avenged the death of Asano Naganori.

ANSWER: **bushido**

[10] More generally, the *bushido* code governed these Japanese warriors who usually carried a long *katana* and a shorter *wakizashi* blade. Many of them rose up against the loss of their traditional rights in the Satsuma Rebellion.

ANSWER: **samurai**

[10] Samurai also needed technical and tactical advice on how to fight well. This 1643 book by acclaimed samurai Miyamoto Musashi, whose scrolls are each identified with an East Asian classical element, provided just that.

ANSWER: *Book of* **Five Rings** [or **Go Rin no Sho**] <Bentley>

21. This emperor briefly acquired Kandahar from Ali Mardan Khan in 1638, but tried three times to unsuccessfully retake the fortress after it fell. For 10 points each:

[10] Name this Mughal emperor, the son of Jahangir. The Lahori Gate is part of one building constructed by this emperor.

ANSWER: **Shah Jahan** [or **Shahjahan**; or Prince **Khurram**]

[10] Shah Jahan constructed this mausoleum for this beloved wife Mumtaz in Agra. This white building with an ultra-notable onion dome was restored under Lord Curzon.

ANSWER: **Taj Mahal**

[10] Other elaborate domed tombs on the Indian subcontinent include the Qutb Shahi tombs of this city in Andhra Pradesh. The fort of Golconda is due west of this city, which Nizam VII kept independent of newly-independent India for a year before it was reluctantly absorbed.

ANSWER: **Hyderabad** ("**HYDRA**"-bahd) <Bentley>

22. A mathematician with this surname first studied almost periodic functions, and a physicist with this surname won a Nobel with James Rainwater for combining the shell and liquid-drop models of the nucleus. For 10 points each:

[10] Give this surname. The physical constant a_0 , which represents the average distance between an electron and proton in a hydrogen atom, is named for a physicist with this last name.

ANSWER: **Bohr** [or Aage **Bohr**; or Harald **Bohr**; or Niels **Bohr**]

[10] Niels Bohr arrived at his namesake radius by proposing that electron motion is confined to these fixed circular paths around the nucleus, analogous to astronomical motion.

ANSWER: electronic **orbits**

[10] The Bohr model only accurately reproduces spectral lines for simple atoms, like hydrogen, or this ion which has a plus-two nuclear charge.

ANSWER: **helium-plus** [or **He⁺**; prompt on **helium**] <Silverman>

23. In this novel, Moses is suckered by the con man Ephraim Jenkinson, who sells him a gross of supposedly-silver-rimmed green spectacles that are actually made of varnished copper. For 10 points each:

[10] Name this 1766 novel which ends with the revelation that "Mr. Burchell" is actually Sir William Thornhill, allowing him to marry Sophia, the daughter of the title churchman, Dr. Charles Primrose.

ANSWER: *The* **Vicar of Wakefield**

[10] *The Vicar of Wakefield* was written by this Irishman, who was dubbed an "inspired idiot" by Horace Walpole. Kate Hardcastle is mistaken for an innkeeper by Charles Marlow in his play *She Stoops to Conquer*.

ANSWER: Oliver **Goldsmith**

[10] Primrose's sudden bankruptcy delays the marriage of his son George to a woman with this first name. Another woman with this first name is the first and, later, third wife of Jude Fawley in a Thomas Hardy novel.

ANSWER: **Arabella** [or **Arabella** Wilmot; or **Arabella** Donn] <Carson>