

PACE NSC 2011

Edited by Mike Bentley, Matt Bollinger, Rob Carson, Kyle Haddad-Fonda, Hannah Kirsch, Trygve Meade, Bernadette Spencer, Guy Tabachnick, and Andy Watkins

Packet 12

Tossups

1. **This book describes men as especially prone to viewing themselves as the center of what it calls “teleological activity.” The Polynesian islanders are given as an exception to the theory defined in this book because of their lack of large game to hunt. This book begins by describing the priesthood as secondary to warriors in most barbaric societies and notes that manual labor is exclusively the work of lower-class (*) people. This book defines a certain type of good as increasing in demand as price and scarcity increase and also describes purchases made only for societal visibility. For 10 points, name the book that introduced the term “conspicuous consumption,” written by Thorstein Veblen.**

ANSWER: *The Theory of the Leisure Class*

<Meade>

2. **Pairs of variables with this property are related by Pontryagin duality; that is, they are each other's Fourier transforms. Those pairs of variables with this property are generally a variable and the derivative of the action with respect to that variable; therefore, they have a lower limit on their (*) commutators. In group theory, elements a and b in a group have this relationship if there is an element g such that g times a times the inverse of g equals b . If a polynomial with real coefficients has roots that are not real, the roots in question are two of these. For 10 points, give the word that also refers to the relationship between $a + bi$ and $a - bi$.**

ANSWER: conjugates [accept word forms]

<Watkins>

3. **Many of this author's works are set in the title suburb of his play *The Season at Sarsaparilla*. One such work is a novel partially set at Xanadu, the mansion of the heiress Mary Hare, who is one of four characters who experience a vision from the Book of Ezekiel. Another novel by this author is named after the magnum opus of the painter Hurtle Duffield. This author of (*) *Riders in the Chariot* and *The Vivisector* also wrote a novel about Laura Trevelyan's relationship with the title German explorer, who journeys across Australia. For 10 points, name this author of *Voss*.**

ANSWER: Patrick White

<Nediger>

4. The female lead of this opera tells of how she helped the man who killed her fiancé, Morold, in her “narrative and curse.” Act two, scene two of this opera comprises a love duet that is broken by a shriek and Kurwenal telling one character to save himself. The second title character’s maid, Brangäne, sets the plot in motion by replacing a bottle of poison with a (*) love potion. The third measure of this opera contains a dissonant chord of F, B, D-sharp, and G-sharp, known as its first title character’s namesake chord. This opera ends with the *Liebtestod*, or *Love-death*, sung by one title character, who is betrothed to King Mark, over the other's body . For 10 points, name this Richard Wagner opera based on a medieval legend.

ANSWER: Tristan und Isolde

<Bollinger>

5. Supporters of this government fought armies trained by men like Andre Cazeneuve and Jules Brunet in the conflict that established it. This government launched a punitive expedition that netted it 500,000 taels following the Mudan Incident. Ineffective revolts against this government include ones named for Saga and Shimpuren. The upper classes were reorganized along the lines of the British peerage during this period, replacing the existing (*) *han* system. Troops under this government won the Battle of Shiroyama, ending the Satsuma Rebellion. This government’s constitution was laid out in the Charter Oath, and it severely weakened the power of the daimyo. Replacing the Tokugawa Shogunate, for 10 points, name this period of modernization and a return to imperial rule in Japan.

ANSWER: Meiji Restoration [or Meiji Period; or Meiji Revolution; or Meiji Renewal; or Meiji Ishin; or Meiji Government]

<Nediger>

6. The canal of Wirsung is a channel passing through this organ, and this organ’s blood supply comes in part from branches of the splenic artery. Its tail runs along the lienorenal ligament, while its head lies in the curve of the duodenum. The release of secretions from the gallbladder and this organ is controlled by the sphincter of (*) Oddi. This organ secretes substances produced in its acini, like trypsinogen, and bicarbonate into the small intestine. This organ secretes a hormone that is stored in the liver, breaks down glycogen, and counters another hormone that this organ produces in the beta cells of its islets of Langerhans. For 10 points, name this organ in which glucagon and insulin are produced.

ANSWER: pancreas

<Kirsch>

7. One figure revered during this event suffered arrow shots through both eyes and the heart, making his judgments fairer. One of its traditional foods is shaped like gold ingots, and others include bags of oranges or tangerines; wives who seek to bear children sometimes eat lotus seeds during it. Preceded by a thorough house-cleaning and ending with a (*) Lantern Festival on its fifteenth day, it involves giving money in envelopes, which are red for good luck. For 10 points, identify this celebration, often involving firecrackers and the dancing of giant puppeteered dragons, which in February 2011 ushered in the Year of the Rabbit.

ANSWER: Chinese Lunar New Year celebration [accept close equivalents involving China and its calendar’s New Year; accept Chun Jié; accept answers involving New Year’s Day until “celebration” is read; prompt on Spring Festival; prompt on Nian; prompt on Yuan Tan]

<Jackson>

8. This composer sandwiched an arioso Andante in D minor between two F major movements in his *Italian Concerto* for harpsichord. A chaconne in D minor is often excerpted from his *Sonatas and Partitas for Solo Violin*. One work attributed to him assembles a diminished seventh chord note by note. This composer used a tune composed by Frederick II for his (*) *A Musical Offering*. He brought the harpsichord out of the continuo to a solo in the fifth of a set of six works, other parts of which have solo violas da gamba. His works include a set of variations on an aria for Count Kaiserling and a gigantic *Mass in B minor*. For 10 points, name this composer of *Toccatina and Fugue in D minor*, the *Goldberg Variations*, and the *Brandenburg Concertos*.

ANSWER: Johann Sebastian Bach

<Kirsch>

9. This deity proved his kingship by making a garment representing the heavens disappear and reappear at a feast held by Anshar. This four-eared, four-eyed figure created the mansion E-Sara and navigates with the aid of a bright star called Nibiru. This figure also tamed a four-legged creature called the *sirrush* or *mushussu* and won one fight by silencing the (*) four directional winds, then commanding a wind to move his magic net. According to the *Enuma Elish*, this father of Nabu created the zodiac and took Kingu's prize possession, the Tablets of Destiny. For 10 points name this slayer of Tiamat, the chief god of the Babylonian pantheon.

ANSWER: Bel Marduk

<Jackson>

10. The relationship between this movement and a later conflict is discussed in Patricia Bonomi's *Under the Cope of Heaven*. One prominent opponent of this movement was Charles Chauncy. Supporters of this movement were known as New Lights, while detractors were called Old Lights. A prominent figure involved in this movement expanded on the theme that "their foot shall slide in due time" in a work that described people being (*) held like an insect in a spider web over an open fire. Another leader of this movement, who was supported by Benjamin Franklin, was George Whitefield. This movement was also led by Jonathan Edwards, who wrote the aforementioned sermon "Sinners in the Hands of an Angry God." For 10 points, name this religious revival of the mid-eighteenth century.

ANSWER: First Great Awakening [prompt on Great Awakening]

<Nediger>

11. This work uses the example of getting a full picture of a house by willfully looking at successive parts up close, in contrast to viewing a ship which approaches involuntarily, to show the validity of causality. This work, which ends by describing the "architectonic" and "history" of its title concept, contains a diagram of four sets of three categories arranged in a diamond. It claims space and time are pre-existent in the mind in its Transcendental Aesthetic, analyzed claims such as (*) "7 plus 5 equals 12," and introduced the phenomenon-noumenon split. For 10 points, name this work which confirms the possibility of synthetic *a priori* truth, written before a similar work on Practical Reason, by Immanuel Kant.

ANSWER: Critique of Pure Reason

<Jackson>

12. **An analogue of the holographic principle in this theory is the AdS/CFT correspondence, or Maldacena duality. A unification of previously proposed theories of this type along with supersymmetry is the eleven-dimensional M theory, whose basic objects are (*) two-dimensional membranes. Prominent critics of this theory include Lee Smolin, who has written on its unfalsifiability. For 10 points, name this theory of modern particle physics, an attempt to unify quantum mechanics with general relativity by modeling particles as the vibrations of namesake one-dimensional structures.**

ANSWER: string theory

<Watkins>

13. **In one of this man's plays, a girl shows a sketch pad full of pictures of her neighbor to a nude model and expresses hope that everyone in heaven looks like that woman. This author wrote a play in which Bruce's fiancé Marie has an affair with Turk, which infuriates alcoholic chiropractor Doc Delaney. This author also won an Academy Award for a screenplay about oil heir Bud Stamper's love for Deanie Loomis, the Elia Kazan film *Splendor in the Grass*. Elma Duckworth and Dr. Lyman perform a scene from *Romeo and Juliet* in a (*) diner near Kansas City in another work by this author of *Come Back, Little Sheba*. For 10 points, name this playwright who used his native Kansas as the setting for *Bus Stop*.**

ANSWER: William Motter Inge

<Weiner>

14. **Early in his career, this man served as a quaestor under the consul Gaius Hostilius Mancinus in Spain. Later, he gained political support from Publius Mucius Scaevola and the Claudians, although he faced opposition from a senator named Scipio Nasica. This man renewed his most prominent scheme upon the death of Attalus III of Pergamum and was the (*) eldest son of Cornelia Africana. This politician broke with precedent and twice tried to be elected tribune. He also used the People's Assembly to impeach Octavius, the chief senatorial opponent of his Lex Sempronia Agraria, a bill that would have revived the policy of redistributing publicly acquired lands. For 10 points, name this man who advocated for agrarian reform during the Roman Republic, the elder brother of Gaius.**

ANSWER: Tiberius Sempronius Gracchus [prompt on Gracchus]

<Bentley>

15. **The lower right of one section of this work depicts a jockey holding a large silver trophy, and that section also depicts a dancer with a violin and a fencer. In another section of this work, oil is spilled on the head of a figure in a sedan chair whose arrest his one-time lover prevents. At the beginning of this work, the title character is being fitted for a suit after inheriting his father's fortune and tries to pay off (*) Sarah Young after getting her pregnant. In another section, the title figure tries to win back his fortune at a gambling house, but in the next section, he is in prison for the debt he has accumulated due to his profligate lifestyle, and he ultimately ends up in Bedlam. For 10 points, name this series of paintings of the wastrel Tom by William Hogarth.**

ANSWER: A Rake's Progress

<Nediger>

16. This quantity names a form of viscosity that only applies to fluids that can have flows with nonzero divergence; those fluids are thus called compressible. This quantity is raised to the polytropic index in the relation that constrains polytropic processes. The parameter (*) b in the van der Waals equation of state exists because nonideal gas particles exclude some amount of this value. Avogadro's law states that this value is constant for a set amount of ideal gas and is equal to about twenty-two point four liters per mol. For 10 points, name this quantity proportional to the cube of length.

ANSWER: volume [accept spatial extent or other clear-knowledge equivalents; prompt on radius or other related quantities]

<Watkins>

17. In one of this man's novels, the protagonist learns of the existence of "good" and "bad" Russian tables. In a novella by this man, the narrator encounters three villainous red-haired men, including a guitar player and a dandy wearing too much make-up. Another novel by this man describes the composition of *Apocalypsis cum figuris*; in that work, narrated by Serenus Zeitblom, Adrian completes his (*) masterwork before dying of syphilis. This author also wrote a novel in which a young student goes to Berghof and meets Naptha and Settembrini as they recover from lung problems. For 10 points, name this author of *Doctor Faustus* and *The Magic Mountain* who described Gustav von Aschenbach's fondness for Tadzio in *Death in Venice*.

ANSWER: Thomas Mann

<Angelo>

18. Frederick Charles of Hesse was very briefly proclaimed king of this country in 1918, and a war named for this country was concluded with the Treaty of Fredrikshamn. This country employed motti tactics to win the Battle of Raate Road, and it cooperated with Germany in Operation Silver Fox against Murmansk. A group called the Activists assassinated Nikolay Bobrikov during this country's struggle for independence. The Soviet Union's post-war boundaries were formally acknowledged at a 1975 set of (*) accords named for this nation's capital. This country fought in the Continuation War after giving up control of the Hanko Peninsula. During World War II, it was led by Carl Mannerheim and lost the Winter War to the Soviets. For 10 points, name this Scandinavian country with capital at Helsinki.

ANSWER: Republic of Finland [or Suomi]

<Bentley>

19. This politician charged that the 9/11 hijackers entered the United States from Canada and told a room of Latino students that "some of you look a little more Asian" in a misguided attempt to defend an ad showing bandana-clad Mexicans sneaking across the border to join a gang. This politician also announced that Frankford, Texas and Dearborn, Michigan were under (*) *sharia*. After defeating Sue Lowden, she held rallies in Searchlight, the hometown of her opponent, who came from behind to defeat her in the largest Senate election turnaround in recent history. For 10 points, name this Tea Party-backed Senate candidate who lost in Nevada to Harry Reid.

ANSWER: Sharon Angle

<Haddad-Fonda>

20. This man arranged for John Galsworthy to “correct” the manuscript of a work this author dedicated to him; that work takes place in the fictional town of Sulaco. He fictionalized his trip to rescue Georges Klein as a novella grouped with “The End of the Tether” and “Youth” when first published. In another of this man’s works, the idiot Stevie trips, accidentally blowing himself up with a bomb given to him by (*) Verloc. Chinua Achebe called him a “bloody racist” for a work whose frame story takes place on the *Nellie* and whose villain is the cruel ivory trader Kurtz. For 10 points, name this author of *Nostromo*, *The Secret Agent*, and *Heart of Darkness*.

ANSWER: Joseph Conrad [or Jozef Teodor Konrad Korzeniowski]

<Wynne>

21. One ruler of this country passed the War Time Election Act and Military Voters’ Act to make sure he had enough votes to support a draft, part of its 1917 Conscription Crisis. This country witnessed an abortive invasion of Campobello Island in the late 1860s. British general Isaac Brock died in a battle fought in this country, although his subordinate Roger Hale Sheaffe would go on to win the Battle of Queenston Heights for him. Invaded in the (*) Fenian Raids, this modern-day country was also the site of a battle that saw the defeat of French forces under General Montcalm; that battle was named for the Plains of Abraham and also saw the death of General Wolfe. For 10 points, name this country, home to the separatist movement FLQ in Quebec.

ANSWER: Canada

<Bentley>

22. One of this author’s characters is an Irish member of Parliament who marries Mary Jones after pursuing Lady Laura and Violet Effingham. This author wrote about Frank Greystock, who must choose between the virtuous governess Lucy Morris and his conniving cousin Lizzie. One novel by this author ends when Paul Montague is forgiven by his friend Roger for marrying Roger’s cousin Hetta Carbury. In another novel by this author, Mr. Arabin marries Miss Bold to the frustration of (*) Obadiah Slope, chaplain of Bishop Proudie. For 10 points, name this author of *The Eustace Diamonds*, *The Way We Live Now*, and *Barchester Towers*.

ANSWER: Anthony Trollope

<Bollinger>

23. Symptoms of Bassen-Kornzweig syndrome are mostly due to a deficiency of this vitamin, which suppresses the metabolism of arachidonic acid and thus helps dilate blood vessels. This vitamin includes four tocotrienols and three tocopherols in addition to its primary form, alpha-tocopherol, which is resecreted by the liver. Ataxia, anemia, and myopathies are the primary symptoms of this vitamin’s deficiency, as it preserves nerve conduction by protecting the (*) myelin sheath from degradation. Found at high levels in nuts and seeds, this vitamin prevents skin damage and may help prevent cardiovascular disease and cancer by protecting the body from the effects of free radicals. For 10 points, name this antioxidant vitamin.

ANSWER: vitamin E [accept either tocotrienol or tocopherol until mention]

<Kirsch>

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Bonuses

1. Radical Republicans set up the Freedmen's Bureau during this period, which popularized the expression "forty acres and a mule." For 10 points each:

[10] Name this period from 1865 to 1877 during which federal troops occupied the former Confederate states.

ANSWER: **Reconstruction**

[10] During Reconstruction, the apocryphal story of Benjamin Butler brandishing the clothing of a man beaten by the Ku Klux Klan during a speech popularized this expression. It referred to Republicans reminding voters of Southern violence by performing the title action.

ANSWER: **waving the bloody shirt** [or **wave the bloody shirt**]

[10] The many "black codes" enacted by Southern governments during Reconstruction often included bans on interracial marriage. This 1967 Supreme Court case overturned the precedent of *Pace v. Alabama* and allowed such marriages to take place.

ANSWER: **Loving** v. Virginia [or Richard Perry **Loving**, Mildred Jeter Loving v. Virginia; accept in either order]

<Magin>

2. This literary critic wrote a scathing article for the Wall Street Journal claiming it is as good to not read at all as it is to read *Harry Potter* and railed against reading in the vein of what he calls the "School of Resentment." For 10 points each:

[10] Name this Sterling Professor at Yale whose works include *The Anxiety of Influence*, *How to Read and Why*, and *The Western Canon*.

ANSWER: Harold **Bloom**

[10] Bloom champions this suicidal gay American whose six-part erotic poem "Voyages" appears in *White Buildings*, which inspired Bloom's love of literature at age ten. He wrote "The bell-rope that gathers God at dawn/dispatches me" in "The Broken Tower."

ANSWER: Hart **Crane**

[10] Crane's masterwork is titled for one of these man-made structures. Five people die due to an accident involving one of these in a Thornton Wilder novel set in San Luis Rey, Peru.

ANSWER: a **bridge** [or *The **Bridge***]

<Jackson>

3. This expatriate looked back to ancient Greece, dividing life into the *vita activa* and *vita contemplativa* in her work *The Human Condition*. For 10 points each:

[10] Name this female German philosopher of Jewish descent. Her work with *The New Yorker* in covering the trial of a Nazi became *Eichmann in Jerusalem: A Report on the Banality of Evil*.

ANSWER: Hannah Arendt

[10] Besides “the banality of evil,” Arendt also coined the phrase “radical evil” in her work on *The Origins* of this system of limitless central government.

ANSWER: totalitarianism

[10] This fellow German expat and member of the Frankfurt school claimed along with Max Horkheimer that the Enlightenment led to the Holocaust in *Dialectic of Enlightenment*. He claimed that “to write a poem after Auschwitz is barbaric.”

ANSWER: Theodor Adorno

<Jackson>

4. If the velocities follow a Maxwell distribution, this quantity is Boltzmann’s constant times temperature over root two times pi times diameter squared times pressure. For 10 points each:

[10] Name this quantity, the average distance traveled by a particle between collisions.

ANSWER: mean free path

[10] This dimensionless number is the ratio of mean free path to some other length scale, like the size of a reaction vessel. Its value determines whether continuum mechanics or statistical mechanics is a more appropriate model to describe a system.

ANSWER: Knudsen number

[10] The Knudsen number can be related to this quantity by multiplying by the Reynolds number and a proportionality constant. This quantity is the ratio of particle velocity to the speed of sound. Vehicles traveling at the speed of sound are said to be traveling at *this* “one.”

ANSWER: Mach number

<Watkins>

5. The nineteenth century was a time of reform in the Ottoman Empire. For 10 points each, answer these questions about attempts to get the empire back on track.

[10] Sultan Mahmud II succeeded in the June 1826 “Auspicious Incident” in destroying the main force of these Ottoman soldiers, who had originated as converted Christian slave soldiers levied through the system of *devshirme*.

ANSWER: janissaries [or yeniceri]

[10] Starting in 1830 with the so-called Gulhane Edict, the Ottoman Sultans Abdülmecid I and Abdülaziz I launched this period of reform, known by a term that translates as “reorganization.” These reforms included the integration of religious communities and the end of the *millet* system.

ANSWER: tanzimat reforms

[10] One major goal of the Ottoman government in the nineteenth century was the settlement of this mostly nomadic people in Eastern Anatolia. They briefly formed an independent principality under ‘Ubaydallah in 1880 and came into bloody conflict with Armenian farmers.

ANSWER: Kurds [or Akrad]

<Haddad-Fonda>

6. At one point, the narrator, identified as “myself,” says that he would exchange all the stoic pleasures of his life for writing one great book or clearing the name of the martyr Jean Calas. For 10 points each:

[10] Name this novel, which first appeared in a German translation by Goethe. It follows two personages discussing the relative merits of French and Italian music and the corrupt versus ethical life in Enlightenment-era France.

ANSWER: *Rameau's Nephew* [or *Le Neveu de Rameau*]

[10] This author of *Rameau's Nephew* also wrote *Jacques the Fatalist* and collaborated with Jean d'Alembert on a project that began as a translation of a similar work by Ephraim Chambers.

ANSWER: Denis **Diderot**

[10] Instead of merely translating Chambers, Diderot and d'Alembert produced this 35-volume work, which brought a critical perspective to all fields of knowledge.

ANSWER: the **Encyclopedie**

<Weiner>

7. This work advises its readers that suffering from evil is virtuous and that evil existed in the world to provide a reason to change it for good. For 10 points each:

[10] Name this work that was written while its author was jailed by Theodoric the Great, a work widely read in the Middle Ages.

ANSWER: *The **Consolation of Philosophy***

[10] Name the philosopher who wrote *The Consolation of Philosophy*.

ANSWER: Anicius Manlius Severinus **Boethius**

[10] The title character of this work describes Boethius as a “meddlesome” writer. This C.S. Lewis work of skeptical philosophy is addressed to a “tempter” named Wormwood.

ANSWER: *The **Screwtape Letters***

<Meade>

8. The type II cells of these structures secrete surfactant, while type I cells form the very thin walls of these structures. For 10 points each:

[10] Name these small sacs at the end of bronchioles that receive carbon dioxide from and pass oxygen to capillaries by diffusion.

ANSWER: **alveoli** [or **alveolus**]

[10] In order to allow the lungs to fully expand and alveoli to fully inflate during inhalation, this serous membrane folds back on itself to form a thin cavity filled with a layer of fluid. The “visceral” layer of this membrane attaches to the lungs, while the “parietal” layer lines the diaphragm and inner wall of the chest.

ANSWER: **pleurae**

[10] These cup-shaped cells of the bronchi and upper bronchioles secrete mucin to help lubricate the lungs and improve respiration. This type of cell is also present in the small intestine.

ANSWER: **goblet** cells

<Kirsch>

9. Handwriting analysis revealed that it was Ferdinand Esterhazy and not this man who was actually responsible for selling secrets to Germany about a 120-millimeter cannon. For 10 points each:

[10] Name this Jewish military officer in the French Third Republic.

ANSWER: Alfred **Dreyfus**

[10] While accused of treason, Dreyfus was detained in this French prison colony, the smallest of the Îles du Salut off the coast of French Guiana.

ANSWER: **Devil's Island** [or **Île du Diable**]

[10] This other crisis during the Third Republic involved a standoff over colonial territory near a Sudanese town, with Major Marchand leading French troops up to Lord Kitchener. Diplomats resolved it in England's favor.

ANSWER: **Fashoda** crisis [or other equivalents mentioning **Fashoda**]
<Jackson>

10. The al-Sayyids are a middle-class family in this city. For 10 points each:

[10] Name this city whose streets include *Palace Walk*, *Palace of Desire*, and *Sugar Street*.

ANSWER: **Cairo**

[10] The aforementioned three streets are the titles of the *Cairo Trilogy* by this Egyptian Nobel Laureate.

ANSWER: Naguib **Mahfouz**

[10] Another street in Mahfouz's Cairo is the namesake alley of this godlike figure, whose sons settle there. Those sons include Jabal, Rifa'ah, and Qasim, who allegorically represent Moses, Jesus, and Muhammad.

ANSWER: **Gebelawi** [or **Jabalawi**; or **Children of Gebelawi**]
<Wynne>

11. This painting was inspired by its artist's second trip to South America. For 10 points each:

[10] Name this painting by Frederic Church that shows a waterfall in the foreground next to a tall tree and a large, red mountain beneath some clouds in front of a distant white mountain in the background.

ANSWER: *The* **Heart of the Andes**

[10] Church was a leading figure in this school of landscape painting that originated in New York. Its members included Thomas Cole.

ANSWER: **Hudson River** School

[10] This other painter of the Hudson River School is most famous for depicting William Cullen Bryant and Thomas Cole standing atop a precipice in *Kindred Spirits*.

ANSWER: Asher **Durand**
<Austin>

12. For 10 points each, identify these countries whose economies rely on spices or natural flavorings.

[10] The world's leading source of natural vanilla is this fourth largest island in the world. Its economy nearly collapsed in 1985 because New Coke skimped on vanilla.

ANSWER: Republic of **Madagascar**

[10] This island country near Madagascar is the world's second leading producer of vanilla and the source for most of the world's ylang-ylang, whose essence is used in expensive perfumes. Nearby Mayotte is a French overseas department.

ANSWER: Union of the **Comoros**

[10] Pemba and Mafia are among the so-called "spice islands" of this country because of their extensive clove plantations. This country's most populated island is Unguja.

ANSWER: United Republic of **Tanzania**

<Haddad-Fonda>

13. One man who held this title was forced to trek across the Alps to beg forgiveness from Pope Gregory VII in 1077. For 10 points each:

[10] Identify this title held by men like Henry IV, the head of a medieval German collection of independent states.

ANSWER: **Holy Roman Emperor** [or Römisch-Deutscher Kaiser; prompt on **Emperor of the Romans** or **Roman Emperor**]

[10] Henry IV begged for Gregory VII to reverse his excommunication by standing in the snow for three days at this town in northern Italy.

ANSWER: **Canossa**

[10] During the revolt of Saxony, Henry IV faced off against Rudolph, a duke of this region of southwestern Germany which fought against Switzerland in a brief 1499 war named for this place. Modern-day Baden-Wurttemberg is part of this historical region.

ANSWER: **Swabia**

<Cohen>

14. James Wilson and George Kelling originated this theory; the latter would advise William Bratton and Police Chief Howard Safir in implementing it to reduce crime in 1990s New York City. For 10 points each:

[10] Name this social science theory asserting that unattended municipal degradation leads to feelings of societal neglect and encourages criminal behavior.

ANSWER: **broken windows** theory

[10] This social psychologist examined the broken windows theory when he left a car in the Bronx and it predictably got vandalized. His recent book *The Lucifer Effect* details his time as an expert witness in the Abu Ghraib trials.

ANSWER: Phillip **Zimbardo**

[10] Zimbardo ran this role-play experiment at his university in which nine men internalized their assigned role as "guards" and became so sadistic that he had to cancel the planned fourteen-day experiment in just six.

ANSWER: **Stanford prison** experiment

<Jackson>

15. This alloy of iron and carbon is distinguished from the higher-carbon cast iron. For 10 points each:

[10] Name this strong material, which contains over 10.5 percent chromium in a “stainless” variety.

ANSWER: steel

[10] The production of steel became feasible in the mid-nineteenth century with the discovery of this process, which reduces the carbon content of pig iron to yield steel..

ANSWER: Bessemer process

[10] The Bessemer process uses a vessel lined with this mineral, calcium magnesium carbonate. It is often used industrially as a replacement for calcite.

ANSWER: dolomite

<Watkins>

16. This man wrote the Polovetsian Dances for an opera that was completed on his death by his countrymen Nikolai Rimsky-Korsakov and Aleksandr Glazunov. For 10 points each:

[10] Name this composer of *Prince Igor*.

ANSWER: Aleksandr Porfiryevich Borodin

[10] This tone poem by Borodin uses a Russian theme and an eastern theme in counterpoint to portray a caravan moving through the title location.

ANSWER: In the Steppes of Central Asia [or Vsredney Azii; accept “On” for “In”]

[10] Borodin wrote Act IV of the never-performed opera-ballet *Mlada*, Acts II and III of which were written by Rimsky-Korsakov and this composer of *Night on Bald Mountain* and *Pictures at an Exhibition*.

ANSWER: Modest Petrovich Mussorgsky

<Tabachnick>

17. Franklin Blake is revealed to have been given a dose of laudanum in this novel, leading to the title object’s disappearance, and Sargent Cuff helps the Virenders recover the title object. For 10 points each:

[10] Identify this novel in which John Herncastle steals the title jewel from India and bequeaths it to his niece Rachel. At the novel’s end, Rachel reunites with Franklin.

ANSWER: *The Moonstone*

[10] *The Moonstone* was written by this author who wrote about Andrew Wanstone and his illegitimate daughters in *No Name* and is known for popularizing detective fiction.

ANSWER: William Wilkie Collins

[10] In this Collins novel, Percival Glyde attempts to put Laura Fairlie in an insane asylum and gain her fortune. Laura resembles Anne Catherick, the title character of this novel.

ANSWER: Woman in White

<Gautam Kandlikar>

18. The sets for this film include a building called the Tower of Babel, while its characters include the scientist Rotwang, Maria's imaginative lover Freder, and a metallic female known as the "Machine-Man." For 10 points each:

[10] Name this film directed by Fritz Lang in which the underground working class goes on strike. Large chunks of it didn't survive to the present day.

ANSWER: Metropolis

[10] *Metropolis* was part of this country's Expressionist movement, whose film works include Max Schreck's portrayal of the vampire *Nosferatu*.

ANSWER: Germany [or Weimar Republic; or Deutschland]

[10] This Expressionist silent film directed by Robert Wiene uses twisted sets to depict the village of Holstenwall, in which Francis visits the title insane asylum director and his murderous hypnotized subject Cesare.

ANSWER: *The Cabinet of Dr. Caligari* [or *Das Kabinett des Doktor Caligari*]

<Jackson>

19. Answer some questions about rendering computer graphics for 10 points each.

[10] This method takes a three-dimensional scene and determines the path that light would take from a light source, among the objects in the scene, to a theoretical two-dimensional screen in front of the camera.

ANSWER: ray tracing

[10] Also called MOBs or BOBs, this term refers to two-dimensional images that are incorporated into a scene. They're often stored as bitmaps.

ANSWER: sprites

[10] Bitmaps store a color value for each one of these. Short for "picture element," these objects are the smallest manipulable part of an image.

ANSWER: pixels

<Watkins>

20. This double-peaked mountain north of Delphi was the resting point of the boat containing human survivors of the Greco-Roman Great Flood myth. For 10 points each:

[10] Name this mountain in Greece, which, like Mount Helicon, is often given as the home peak of the Muses and is thus associated with creativity.

ANSWER: Mount Parnassus [or Parnassos]

[10] Name either survivor of that great flood. They repopulated the earth by throwing rocks behind them, which grew into new humans.

ANSWER: Deucalion and Pyrrha

[10] This youth, saved by Arsinoe or by his sister Electra from murder at the hands of his mother, hid at Parnassus under the care of King Strophius.

ANSWER: Orestes

<Jackson>

21. In 1996, this country's capital was moved to Dodoma. For 10 points each:

[10] Name this country, which was formed in 1964 from the union of Tanganyika and Zanzibar.

ANSWER: United Republic of Tanzania

[10] This first president of Tanzania and supporter of Pan-Africanism is known as the "Father of the Nation." He adhered to the concept of ujamaa.

ANSWER: Julius Kambarage Nyerere

[10] Another African ruler known as the "Father of the Nation" was Sam Nujoma, the first president of this country. The SWAPO agitated for this country's independence from its southern neighbor; it finally gained that status in 1990.

ANSWER: Republic of Namibia [or Republiek van Namibië]

<Nediger>

22. The title character of one of his plays is driven insane after his wife Laura doubts whether he is actually their daughter's father. For 10 points each:

[10] Name this Swedish playwright of the aforementioned *The Father* whose *Miss Julie* centers on a woman who falls in love with her valet and eventually commits suicide.

ANSWER: August Strindberg

[10] This Swedish Nobel Prize winner wrote *The Dwarf* and *Pilgrim at Sea*, and his *Barabbas* follows the life of the title character after he escapes from his sentence due to Jesus' heroics.

ANSWER: Pär Lagerkvist

[10] Nils is shrunk and takes journeys with geese, during which he learns about Swedish culture and geography, in this Swedish author's *The Wonderful Adventures of Nils*. She also penned *Thou Shall Bear Witness!*

ANSWER: Selma Lagerlöf

<Gaurav Kandlikar>

23. Xanthine oxidase catalyzes the formation of this compound, which causes Lesch-Nyhan syndrome when it builds up in bodily fluids. For 10 points each:

[10] Name this compound, the end product of purine metabolism, that is secreted in liquid waste.

ANSWER: uric acid [or urate]

[10] This disease is caused by the buildup of uric acid in the tendons and joints. Its most notable symptom is painful swelling of the big toe.

ANSWER: gout

[10] High uric acid has been found to correlate with insulin resistance, meaning that it could be a risk factor for type 2 of this disease.

ANSWER: diabetes mellitus

<Kirsch>