

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 15

Tossups

1. **Although he had not yet actually negotiated a peace settlement, this man rode back and forth in front of opposing armies at Casale yelling “peace!” This minister later set up an organization to counter the aggression of Ferdinand III called the League of the Rhine. His arrest of a victor at the Battle of Lens sparked a revolution ended by the Peace of Rueil. Following the second Battle of the Dunes, this man negotiated a treaty that saw Philip IV of Spain give his daughter to this minister’s master. He gained his highest post thanks to the approval of (*) Anne of Austria, the king’s mother. This man had Louis de Bourbon, the Prince of Conde arrested in 1648, which prompted the Fronde of the Parlement, and he also negotiated the aforementioned Treaty of the Pyrenees. For 10 points, name this Italian-born adviser to Louis XIV.**

ANSWER: Cardinal Jules Mazarin [or Cardinal Giulio Raimondo Mazzarino]

<Bentley>

2. **This poem may have been written to be read aloud at the Highgate “House of Charity.” This poem notes that “One may lead a horse to water / Twenty cannot make him drink,” as one of the protagonists is “kicked and knocked,” “mauled and mocked,” until the attackers tire of her resistance. The central figures lie “golden head by golden head” and “locked together in one nest,” and are haunted by the death of (*) Jeannie, who “should have been a bride.” This work’s title entity appears “morning and evening” by a brook and features “damsons and bilberries” and “swart-headed mulberries.” Cries of “come buy, come buy” entice Laura and Lizzie to buy addictive fruit in, for 10 points, what Christina Rossetti poem?**

ANSWER: “Goblin Market”

<Ray>

3. **The creation of the Siberian Traps, which may also have been the cause of the Permian-Triassic extinction, is due to one of these entities. Mobergs and tuyas are examples of these structures with flat tops due to the melting of an icecap. Underwater (*) “black smokers” are examples of these structures, and hotspots are regions featuring their characteristic activity that may be due to mantle plumes. Igneous rocks that form due to these objects have small crystals, are also called “extrusive,” and include obsidian. For 10 points, name these features, whose shapes include the “shield” examples that make up many Hawaiian islands, exemplified by Krakatoa and Vesuvius.**

ANSWER: volcanoes

<Watkins>

4. One of these works includes a descending chromatic scale in parallel thirds that sounds like laughter, leading it to be known as “The Devil’s Chuckle.” Three of these are marked Posato, or “sedate.” The ninth of these pieces alternates between imitations of a flute and a horn, representing a shepherdess and a hunter. The last of these pieces presents a twelve-bar theme and eleven variations, one of which includes (*) left-hand pizzicato, before a finale rife with arpeggios. That piece, in A minor, was used by Rachmaninoff in his *Rhapsody on a Theme of their composer*. For 10 points, name these 24 monstrously difficult works for solo violin composed by an Italian virtuoso who was supposedly possessed by the Devil.

ANSWER: caprices by Niccolò Paganini [or capriccios by Niccolò Paganini]

<Tabachnick>

5. Immediately prior to this event, Louie Witt attempted to protest by obliquely referring to Neville Chamberlain’s appeasement of Nazi Germany. James Tague was wounded in the right cheek during this event. In the aftermath of this event, Harold Doyle, John Gedney, and Gus Abrams, the so-called “Three Tramps,” were arrested, and Officer J.D. (*) Tippit was gunned down about an hour after this event. A Mannlicher-Carcano was the likely weapon used in this event, in which John Connally and another passenger were shot as a motorcade passed through Dealey Plaza. Investigated by the Warren Commission, for 10 points, name this event that occurred on November 22, 1963, in which the then-president was shot.

ANSWER: the assassination of John Fitzgerald Kennedy [or assassination of JFK; accept equivalents for assassination]

<Wynne>

6. Catholic themes permeate this man's tale of Rudolph Miller's encounter with the entirely insane Father Adolphus, “Absolution,” as well as that of Lois, who visits her brother Kieth in a Jesuit seminary in “Benediction.” Sally Carrol limps back to Georgia after becoming disillusioned with her marriage in another work by this man, who wrote of Dexter Green's disastrous obsession with Judy Jones in a story collected in (*) *All the Sad Young Men*. This author of “The Ice Palace” and “Winter Dreams” wrote of a character who severs Marjorie's pigtailed after being tricked into the title action in a story found in *Flappers and Philosophers*, “Bernice Bobs Her Hair.” For 10 points, name this author better known for novels like *This Side of Paradise* and *The Great Gatsby*.

ANSWER: Francis Scott Key Fitzgerald

<Ray>

7. This structure contains the suprachiasmatic nucleus, which is responsible for the synchronization of slave oscillators and which receives direct input from the retina. Neurons of its arcuate nucleus terminate in the median eminence and are responsible for the release of dopamine into a certain (*) portal system. This structure is in part responsible for menstrual cycle regulation by releasing GnRH to stimulate FSH and LH release. Its paraventricular neurons control the release of oxytocin and vasopressin and project directly to the posterior pituitary. For 10 points, name this gland located just above the brain stem that links the nervous and endocrine systems.

ANSWER: hypothalamus

<Kirsch>

8. This author included a satirical list of arguments advocating slavery in one work, while in another he endorsed the idea of a female head of state. In another work, this man popularized the idea that climate has a material affect on the temperaments of the people who live in it, leading him to the conclusion that Middle Europeans were the ideal people. In addition to that work, which was narrated by a hypothetical (*) traveler from the Middle East, he wrote one in which he theorized that monarchies were based on honor, despotisms on fear, and republics on virtue. For 10 points, name this French political philosopher who wrote *The Persian Letters* and *The Spirit of the Laws*.

ANSWER: Charles Louis Secondat, Baron de Montesquieu [accept either answer]

<Meade>

9. The so-called coup by memorandum in this country brought about the downfall of its Justice Party, while a new constitution was proclaimed following a 1960 coup by General Gursel. The first ruler of this nation successfully annexed the French-controlled region of Alexandretta. This modern-day country's borders were originally set by the Treaty of Sevres, although it gained formal recognition by the Treaty of (*) Lausanne. In response to the overthrow of Archbishop Makarios, it launched a 1974 invasion and occupation of a nearby nation. Ruled during World War II by President Ismet Inonu, this country now controls Northern Cyprus. For 10 points, name this modern-day nation that arose in Anatolia following the collapse of the Ottoman Empire.

ANSWER: Republic of Turkey

<Bentley>

10. The protagonist of this work is terrified after meeting the madman Henry, who gathers nosegays for the Queen of the Netherlands. Another character in this work recalls how his servant was fooling around with his gun when it went off and broke the thumb of a servant-girl. The protagonist of this novel describes meeting his love at a ball in (*) Walheim in a letter to his friend, Wilhelm. The title character of this novel fervently reads the poetry of Ossian to the wife of Albert, nicknamed Lotte. For 10 points, name this novel about a man who kills himself over unrequited love, written by Johann Wolfgang von Goethe.

ANSWER: *The Sorrows of Young Werther* [or *Die Leiden des jungen Werthers*]

<Bollinger>

11. This phenomenon is characterized by energy dissipating from integral length scales to Taylor microscales to Kolmogorov scales, an energy cascade introduced by Lewis Fry Richardson. One contribution to the study of this phenomenon related the turbulent stresses to the mean flow, the (*) Boussinesq hypothesis. This phenomenon is associated with vortex stretching and the development of eddies. This phenomenon typically occurs at high Reynolds numbers, at least four thousand for pipe flow. For 10 points, name this flow regime contrasted with laminar flow that refers to chaotic, stochastic motion.

ANSWER: turbulent flow [or turbulence]

<Watkins>

12. One part of this text describes snorting war horses that charge early in the morning and goes on to describe the ungrateful nature of man. The title figure of one section is told to shake a palm tree to drop fresh dates during the birth of Jesus, while another section features the “Throne Verse” and the striking of a murderer after the sacrifice of a yellow heifer. Those sections, called “Mary” and “The (*) Cow,” are found, after an opening asking for direction “along the straight path,” among readings arranged by order of length that are subdivided into *ayat*. Its 114 readings, of which all but the ninth begin with the word “Bismillah,” are called *suras*. For 10 points, name this holiest book of Islam.

ANSWER: al-Qur'an [or Koran; accept answers containing adjectives such as “Holy” or “Blessed”]

<Jackson>

13. This country's war for independence was halted by the Linggadjati Agreement, which was not implemented. Dissatisfaction over the later Renville Agreement led to the Madiun Affair, an attempted communist takeover in 1948. A coup in this country was prompted by the 1966 Supersemar order. A leader of the Golkar party in this country promulgated the New Order, while its first leader withdrew from the UN in 1968 and practiced (*) “guided democracy”. It fought a war against the British, who wanted to unify Sabah and Sarawak, and its second leader suppressed an independence movement in Aceh and invaded Portuguese Timor in 1975. For 10 points, name this country containing the largest Muslim population in the world, once ruled by Sukarno and Suharto.

ANSWER: Republic of Indonesia

<Haddad-Fonda>

14. In one work, this figure uses a cloak of invisibility before competing to throw a javelin, hurl a boulder twelve fathoms, and carry a king while leaping over that boulder. In that work, Hagen and Gunther go hunting with this man and stab a leaf-shaped weak spot on his back to kill him. He also learned the language of (*) birds, withdrew a sword that Odin stuck in a tree, and bathed in dragon's blood after using that sword, called Gram or Balmung, to slay Fafnir. In the *Volsunga Saga*, he enters a ring of fire to rescue Brynhild. For 10 points, name this Germanic hero of the *Nibelungenlied*, the son of Sieglinde and Siegmund.

ANSWER: Sigurd Sigmundson [or Siegfried; or Sigurthr; or Sifrit; prompt on Sivard]

<Jackson>

15. In one of this man's works, a man peeks his head inside a bed curtain while the title reclining nude woman with flower bracelets raises her right hand. The title character, wearing a white turban and a crown, looks behind at backlit Hebrew writing in another of his works. A man puts his hand over the heart of the title figure in a red dress in a wedding portrait by this painter of *Danaë* and (*) *Belshazzar's Feast*. In one work, he showed a man carrying a flag with a blue stripe while others hoist spears, and in another, a figure uses forceps to display a corpse's muscles. This artist of *The Jewish Bride* made several portraits of his wife Saskia, in addition to over 80 self-portraits. For 10 points, name this Dutch painter of *The Night Watch* and *The Anatomy Lesson*.

ANSWER: Rembrandt Harmenszoon van Rijn [accept either]

<Tabachnick>

16. Norbert Elias drew on one of this man's theories to explain the concept of habitus; that theory is the idea that non-discursive actions, like hand gestures, completely embody objects of culture and is called the "technique of the body." He drew on fieldwork conducted by Bronislaw Malinowski to write his most notable work. This man's most famous essay was written about (*) items which are infused completely with the identity of their original owners, meaning they cannot be totally alienated from them, which embodies the concept of "total prestation," preventing them from being free from the expectation of reciprocity. For 10 points, name this author of *The Gift*, a French sociologist.

ANSWER: Marcel Mauss

<Meade>

17. The Congolese Inga I and Inga II examples of these structures are considered technological failures, while the Gibe III one in the Omo Valley has caused a conflict between Kenya and Ethiopia. Omar al-Bashir campaigned for re-election by boasting about the Merowe one in Sudan, while the Cahora Bassa one in Mozambique is the largest in southern Africa. The (*) Akosombo one in Ghana is closely associated with the Volta Aluminum Company, and the Kariba one on the Zambia-Zimbabwe border is particularly tall. For 10 points, identify this kind of structure typified by the Aswan High one that created Lake Nasser along the Nile.

ANSWER: dams

<Haddad-Fonda>

18. The footnotes to this novel reference Herbert Marcuse's theories of power and subjugation. One character in this novel tells of a newspaper writer who dies in Veracruz in love with the wife of a Mafia boss. The straight man in this novel contracts horrific diarrhea after his friend gives him food he claims is from his mother. One of the leads in this novel mourns giving up his old love, whom he calls (*) "Marta," while his companion cannot fulfill his desires for the waiter Gabriel. In this novel, the homosexual Luis Molina tells Valentin the plots of B-movies while they share a cell. For 10 points, name this novel by Manuel Puig.

ANSWER: Kiss of the Spider Woman [or *El Beso de la Mujer Araña*]

<Bollinger>

19. The fraction of particles with a value x for this quantity is proportional to e to the negative x over k times temperature, according to the Boltzmann distribution. The band gap of a semiconductor refers to a difference in this quantity. It may be found as the eigenstates of the (*) Hamiltonian operator. The chemical potential is defined as the particle number derivative of this quantity for a system. For 10 points, name this quantity, components of which are contributed by the motion of particles at a given velocity and by the interaction of particles with potential fields.

ANSWER: total energy

<Watkins>

20. One unfinished building by this architect had a central octagon with eight niches in the exterior and was called Santa Maria degli Angeli. Another of his buildings has a portico supported by a row of thin, unfluted columns between arches decorated by terra cotta roundels by Andrea della Robbia. He designed an object that contained one spherical vault on top of another and used a herringbone pattern of bricks. That work by this architect of the Ospedale degli Innocenti was meant to go on an (*) octagonal base. This man invented linear perspective and used it in a failed bid to decorate the door of the Florence Baptistery. For 10 points, name this rival of Lorenzo Ghiberti who designed an innovative dome for Florence's Cathedral of Santa Maria del Fiore.

ANSWER: Filippo Brunelleschi

<Tabachnick>

21. This event resulted in the Great Lakes refugee crisis. Romeo Delleaire and Jacques Roger Booh-Booh were criticized for inaction during this event, which saw the establishment of the "Zone Turquoise." Carried out by the *Interahamwe*, this event prompted the deployment of UNAMIR. This event was sparked when President Juvenal (*) Habyarimana's plane was shot down, and it ended when Paul Kagame of the RTF took power. This event was executed by the Hutus against the minority Tutsis. For 10 points, name this 1994 mass killing that took place in an African country.

ANSWER: Rwandan genocide [accept obvious equivalents]

<Bollinger>

22. In one short story by this author, Aksionov is framed for the murder of a merchant and sent to Siberia, where he encounters the true murderer, Semyonich. This author of "God Sees the Truth, But Waits" also wrote a short story in which an argument between two sisters inspires Pahom to become obsessed with acquiring (*) property, which leads to his death when he attempts to buy as much as possible from some Bakshirs. The title figure grows to pity his daughter Liza and wife Praskovya and undergoes the ministrations of his servant Gerasim after he falls while hanging curtains in another work by this author of "How Much Land Does a Man Need?" For 10 points, name this Russian author of *The Death of Ivan Ilyich*.

ANSWER: Leo Nikolayevich Tolstoy

<Kirsch>

23. A curve that has torsion zero everywhere lies in this many dimensions. The Hilbert and Peano curves have a Hausdorff dimension of this. A trivial statement about spheres of this many dimensions is also true for the dimension one greater than this one by the Poincaré conjecture. An Argand diagram requires this many dimensions, since the (*) complex numbers are a vector space of this many dimensions over the reals. A manifold of this many dimensions is called a surface. Polygons and polar coordinates exist in this many dimensions, and objects of this many dimensions have a volume of zero, as they have no depth. For 10 points, give the number of dimensions of a plane.

ANSWER: two dimensions

<Tabachnick>

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Bonuses

1. The Gini coefficient is a measure of this economic quantity, which is graphed on the Lorenz curve. For 10 points each:

[10] Name this economic concept which usually results in a small percentage of people having a larger percentage of the wealth than the majority.

ANSWER: income **inequality**

[10] One prominent economist to write about income inequality and poverty is this Indian, the author of *Collective Choice and Social Welfare*.

ANSWER: Amartya **Sen**

[10] One contemporary method of dealing with income inequality is this one, practiced by the Grameen Bank, which extends tiny loans to business owners in the third world to provide start-up capital or room to expand.

ANSWER: **microcredit**

<Meade>

2. In this work, Princess Rudaba gives birth to a hero who dies when his horse Rakhsh falls in a pit trap; that hero was previously forced to kill his son Sohrab. For 10 points each:

[10] Name this epic in which that hero, Rostam and undergoes seven labors.

ANSWER: **Shahnameh** [or **Book of Kings**; or **Epic of Kings**]

[10] Ferdowsi set the Shahnameh in this country, his homeland. He describes the fall of this country's last Zoroastrian ruler in the text.

ANSWER: Islamic Republic of **Iran** [or **Persia**]

[10] This white bird assists in Rostam's birth by teaching Zal how to perform a cesarian section.

ANSWER: **Simurgh**

<Jackson>

3. Van Cliburn won the 1958 Tchaikovsky Competition with a performance of this composer's difficult third piano concerto. For 10 points each:

[10] Name this piano virtuoso and composer of *The Isle of the Dead* and a *Prelude in C-sharp minor*.

ANSWER: Sergey Vasilyevich **Rachmaninoff**

[10] Rachmaninoff made a piano arrangement of this fiendishly fast piece by Nikolai Rimsky-Korsakov. It first appeared in the latter's opera *The Tale of Tsar Saltan* and represents Prince Gvidon's transformation into the title buzzing insect.

ANSWER: "**Flight of the Bumblebee**"

[10] Rachmaninoff wrote a choral symphony setting Konstantin Balmont's liberal translation of this Edgar Allan Poe poem.

ANSWER: "The **Bells**"

<Tabachnick>

4. This term derived from the name of a Scandinavian people is used for an area that encompassed parts of Northumbria and East Anglia. For 10 points each:

[10] Name this term used to describe a region of England ruled by the Vikings rather than the Anglo-Saxons throughout the 9th and tenth centuries.

ANSWER: **Danelaw** [or **Danelagh**; or **Dena lagu**; or **Denelagen**]

[10] The boundaries of Danelaw were defined by a treaty between the Viking Guthrum and this man, the first ruler to proclaim himself king of the Anglo-Saxons and the only English king to retain the epithet, "the Great."

ANSWER: **Alfred** the Great [or **Aelfred** the Great]

[10] Danelaw extended into the eastern part of this Anglo-Saxon kingdom. This kingdom founded between Northumbria and Wessex had its capital at Tamworth and was led by rulers like Offa and Coenwulf.

ANSWER: **Mercia**

<Cohen>

5. Give the following about a political idea and its proponents, for 10 points each.

[10] This idea states that national and local governments should share power between themselves, with local governments exercising greater control over their natural areas of expertise.

ANSWER: **federalism**

[10] "Laboratory state" federalism was promoted by this philosopher, who wrote that it should be used to try out ideas which might be beneficial for the national government in books like *The Public and Its Problems*.

ANSWER: John **Dewey**

[10] John Dewey remains best known for promoting strong school systems in this book, in which he wrote that comprehensive schools were necessary to prepare citizens for the necessities of public life.

ANSWER: **Democracy and Education**

<Meade>

6. Bernhard Riemann was a busy man. For 10 points each:

[10] The Riemann hypothesis states that nontrivial zeroes of this function all have real part $1/2$. For a given number z , it is defined as the sum from n equals 1 to infinity of n to the negative z .

ANSWER: Riemann **zeta** function

[10] The zeta function's value at 2 is the solution to the Basel problem. That value is pi squared over this smallest perfect number.

ANSWER: **6**

[10] Riemann names a tensor that calculates this property useful in differential geometry. It can be extrinsic or intrinsic and is equal to the inverse of the radius of an object's osculating circle.

ANSWER: **curvature**

<Tabachnick>

7. This author described his persecution for communist sympathies and his affair with Simone de Beauvoir in an essay subtitled “writing on writing,” *Nonconformity*. For 10 points each:

[10] Name this American author depicted as Lewis Brogan in de Beauvoir's *The Mandarins*, whose own works include a novel about the absurd exploits of Dove Linkhorn, *A Walk on the Wild Side*.

ANSWER: Nelson Algren

[10] Algren's most famous work is this one, which sees the death of the morphine-addicted Frankie Machine after he defends Molly Novotny from Drunkie John.

ANSWER: *The Man with the Golden Arm*

[10] Algren wrote an iconic essay on this locale, calling it “city on the make.” More famous literary treatments of this city include a poem by Carl Sandburg describing it as “Hog Butcher for the World.”

ANSWER: Chicago

<Ray>

8. The church in Sudbury can be seen in the background of this painting, which shows Frances Carter wearing a blue dress standing next to a man holding a hunting rifle. For 10 points each:

[10] Name this work depicting the title newly married couple.

ANSWER: *Mr. and Mrs. Andrews*

[10] *Mr. and Mrs. Andrews* was painted by Thomas Gainsborough, who also made this 1770 portrait of Jonathan Buttall wearing an outfit of the title color.

ANSWER: *The Blue Boy*

[10] Gainsborough also painted a portrait of Sarah Siddons, whom this artist depicted as the tragic muse. This man helped found the Royal Academy and was elected its first president.

ANSWER: Sir Joshua Reynolds

<Cohen>

9. In 1839, the British deposed the king of this territory and replaced him with a puppet ruler. For 10 points each:

[10] Identify this modern-day country that ceded territory via the Treaty of Gandamak to British. Britain initially got involved in this country after an attack on its city of Herat.

ANSWER: Afghanistan

[10] This no-longer-extant country, whose predecessor state was Britain's chief rival in the “Great Game,” invaded Afghanistan in 1979. Its first leader was Vladimir Lenin.

ANSWER: the Soviet Union [or USSR; do not accept “Russia”]

[10] Afghanistan is home to the second-largest population of these people in the world. They claim descent from Afghana, a grandson of Saul, and are also found between the Indus River and the Sulaiman Mountains in Pakistan.

ANSWER: Pashtun People [or Pushtun; or Pakhtun; or Pathan; prompt on Afghan]

<Haddad-Fonda>

10. Name some things about RNA processing for 10 points each:

[10] A tail consisting of a series of this nitrogenous base is added to the 3' ("three prime") end of an RNA molecule almost immediately after transcription.

ANSWER: adenine

[10] Spliceosomes remove these non-coding regions of RNA on the way to creating the mature RNA molecule that is exported and translated to protein.

ANSWER: introns

[10] In order to add a 5' ("five prime") cap to RNA, a certain nitrogenous base is removed from this molecule and then methylated. This nucleotide provides the energy necessary to attach tRNA to the A site of a ribosome, as well as translocation of the ribosome along an mRNA strand.

ANSWER: guanosine 5' triphosphate [or GTP]

<Kirsch>

11. Its economic viability was challenged when riots broke out after the 1907 premier of Synge's *The Playboy of the Western World*. For 10 points each:

[10] Identify this theater revived by the success of Sean O'Casey plays like *The Shadow of a Gunman* and *Juno and the Paycock*, the foremost landmark of the Irish literary revival.

ANSWER: Abbey Theater [or the National Theater of Ireland]

[10] This author's plays like *Cathleen Ni Houlihan* helped establish the Abbey Theater's prestige, though it was poems like "Sailing to Byzantium" and "The Second Coming" that won this Irishman the Nobel Prize.

ANSWER: William Butler Yeats

[10] This woman wrote a play about the tragicomic fallout from a simple mistake by Mrs. Tarpey, *Spreading the News*, for the Abbey Theater's opening night. She is generally seen as the organizing force behind the Irish Revival.

ANSWER: Isabella Augusta, Lady Gregory [accept Isabella Augusta Persse]

<Ray>

12. In one of this man's operas, the title character goes mad during the scene "Il Dolce Suono." For 10 points each:

[10] Name this prolific Italian composer of operas like *Lucia di Lamermoor* and *The Elixir of Love*.

ANSWER: Gaetano Donizetti

[10] Donizetti was a contemporary of this other Italian, noted for his flowing melodic lines in works like *La Sonnambula* and a work in which a druid priestess immolates herself, *Norma*.

ANSWER: Vincenzo Bellini

[10] Donizetti and Bellini were both practitioners of this style, named after the smooth, agile, beautiful singing it required.

ANSWER: bel canto

<Rosenberg>

13. Answer these questions about the rise of right-wing parties in Europe for 10 points each.

[10] This country's People's Party, led by Pia Kjaersgaard, demands the compulsory singing of psalms in schools. In December 2010, this country's government foiled an attack on the building of the Jyllands-Posten, a newspaper that had published cartoons of the Prophet Muhammad.

ANSWER: Kingdom of Denmark

[10] This leader of France's Front National, the daughter of the man Jacques Chirac defeated in a 2002 run-off, made headlines in March 2011 when her party polled 15 percent in local elections.

ANSWER: Marine Le Pen

[10] The far-right Democrats of this country celebrated their first-ever seats in Parliament by showing up in traditional pastoral costumes after the 2010 general election, in which state television banned their ad showing a woman in a burka beating an old white woman in a race for access to state pension funds.

ANSWER: Kingdom of Sweden

<Haddad-Fonda>

14. For 10 points each, answer the following questions about circumstances that make practicing Islam complicated.

[10] If you live north of the Arctic Circle and Ramadan falls during the summer, you're kind of screwed. Fortunately, one *fatwa*-sanctioned solution is to fast according to the position of the sun above this holy shrine in Mecca.

ANSWER: Ka'ba

[10] If you are standing on Mecca's antipode, it's hard to find this direction in which you should pray. A simple solution is to take one step forward, after which this direction will be in front of you.

ANSWER: qibla

[10] Finding the *qibla* is even more difficult on a space shuttle, but perhaps a more serious problem is that, with a water shortage and no gravity, it is almost impossible to perform this action required before prayer.

ANSWER: ablution [or wuduˈ; be generous and accept ghusl too]

<Haddad-Fonda>

15. This phenomenon is quantified by a number called pK_a . For 10 points each:

[10] Name this phenomenon, which according to one definition is the tendency to donate a proton.

ANSWER: acidity

[10] A definition of acidity and basicity that reflects accepting and donating electron pairs, rather than protons, was offered by this chemist.

ANSWER: Gilbert Newton Lewis

[10] With Merle Randall, Lewis created a rule giving this quantity for a species in an ideal solution as being the same as the pure species in the same state as the solution and at the same temperature and pressure.

ANSWER: fugacity

<Watkins>

16. Answer the following about the German navy, for 10 points each.

[10] This only major naval battle of World War I was a British tactical victory, despite their loss of more tonnage. John Jellicoe prevented the Germans from gaining dominance of the North Sea off of the namesake peninsula.

ANSWER: Battle of **Jutland** [or Battle of the **Skagerrak**; or **Skagerrakschlacht**]

[10] This Grand Admiral was the last president of Nazi Germany. He also pursued a policy of unlimited U-Boat warfare.

ANSWER: Karl **Dönitz**

[10] The British called these vehicles, operated by the German Navy during World War I, “baby killers.” Examples include the LZ85. Particularly vulnerable to incendiary bullets, their raids often prompted blackouts.

ANSWER: **zeppelins** balloons [prompt on **rigid airship**; prompt on **blimp**]

<Rosenthal>

17. Under his Italian name, he is the subject of Matteo Boiardo poem; in Ludovico Ariosto’s treatise, Astolfo journeys to the moon to recover this man’s wits after his lover Angelica’s infidelity drives him mad. For 10 points each:

[10] Name this paladin of Charlemagne and wielder of the sword Durendal. In a *chanson de geste*, he dies in battle fighting Saracens at Roncevaux Pass after Ganelon betrays his army.

ANSWER: **Roland** [or **Orlando**]

[10] Roland waits as long as possible to blow this legendary horn whose call for reinforcements summons the 236-year-old, white-bearded Charlemagne. When Roland blows it, his temples burst, leading to his death as his brains leak out.

ANSWER: **Oliphant**

[10] This other work of medieval literature, by archbishop Jacobus de Voragine, is a compendium of stories about saints, such as Saint George’s fight with the dragon, preceded by fanciful etymologies. It also tells many miracle tales about holy relics.

ANSWER: **Golden Legend** [or **Legenda aurea**; or **Legenda sanctorum**]

<Jackson>

18. This equation merely states that the energy of a system must be one of the eigenvalues of the Hamiltonian operator applied to the wavefunction. For 10 points each:

[10] Name this fundamental equation of quantum mechanics.

ANSWER: **Schrödinger** equation

[10] The solutions to the Schrödinger equation for this simple model system are just linear combinations of sines.

ANSWER: **particle in a box**

[10] The solutions to the Schrödinger equation have this property, meaning that the integral over all space of the product of any two of them must equal zero. Two vectors have this property if they are perpendicular.

ANSWER: **orthogonal**

<Watkins>

19. It was constructed following a skirmish with French forces at Great Meadows, which is now Farmington, Pennsylvania. For 10 points each:

[10] Identify this fort, which was surrendered following a July 3, 1754 attack by the French.

ANSWER: Fort **Necessity**

[10] A force of Virginians at both the Battles of Fort Necessity and Fort Duquesne were led by this man, who would later go on to go on to unanimously win the presidential election of 1789.

ANSWER: George **Washington**

[10] The British forces at Fort Duquesne were commanded by this general, who had planned and lent his name to the campaign to take the fort. He ultimately died from the wounds he received at the battle.

ANSWER: Edward **Braddock**

<Bentley>

20. The Praise-Singer asks this man to sing of the irresponsible “Not-I Bird,” and he persuades the market-mother Iyaloja to let him take a one-night bride whose beauty struck him only minutes earlier. For 10 points each:

[10] Name this man last seen in a prison cell, whose primary duty is reported to the authorities at a ball by the manservant Amusa.

ANSWER: **Elesin** Oba

[10] Elesin allows colonial officer Simon Pilkings to prevent his tradition-dictated ritual suicide in this play. His son Olunde, back from a promising education in Europe, chooses to commit suicide in his father’s stead.

ANSWER: **Death and the King’s Horseman**

[10] Wole Soyinka, the author of *Death and the King’s Horseman*, adapted it from a historical incident among his native Yoruba people in this home country of his.

ANSWER: Republic of **Nigeria**

<Jackson>

21. A republic on this island was once led by Pasquale Paoli. For 10 points each:

[10] Identify this island in the Mediterranean, the birthplace of Napoleon.

ANSWER: **Corsica** [or **Corse**]

[10] France had gained possession of Corsica through a 1768 treaty named for this place. The 231st clause of a later treaty of this name became known as the “War Guilt Clause,” and that treaty was opposed by the Irreconcilables.

ANSWER: Treaty of **Versailles**

[10] In the Treaty of Versailles, France purchased Corsica from this city-state. It was known as the Ligurian Republic during the Napoleonic era.

ANSWER: Most Serene Republic of **Genoa** [or Repubblica di **Genova**; or Repubrica de **Zena**]

<Bentley>

22. One character in this work goes against the will of her family by pursuing a secret relationship with Philip Wakem. For 10 points each:

[10] Name this work chronicling the lives of Tom and Maggie Tulliver near the town of St. Ogg's.

ANSWER: *The Mill on the Floss*

[10] *The Mill on the Floss* was a work by this author of *Silas Marner* and *Daniel Deronda*.

ANSWER: George Eliot [or Mary Anne Evans]

[10] Much of Eliot's *Silas Marner* concerns the title character raising this golden-haired child, who is found by Silas after the death of her mother Molly Farren.

ANSWER: Eppie

<Cohen>

23. For 10 points each, give the following about the work of Michael Faraday:

[10] Faraday's law of induction incorporates a negative sign to reflect this eponymous law, which states that induced currents always occur in a direction to oppose the change that caused it.

ANSWER: Lenz's Law

[10] The Faraday effect, involving the rotation of the plane of polarization of light waves in a magnetic field, is strongest in transparent types of these materials that are often inserted in capacitors.

ANSWER: dielectrics

[10] Faraday discovered one of the first examples of these devices, typically made of oxides of manganese and nickel, and whose namesake curves are approximated by the Steinhart-Hart equation.

ANSWER: thermistors

<Greenthal>