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 6

Tossups

1. **Later additions to this site included a storage area for bronze called the Chalkotheke and a statue of a four-horse chariot dedicated by Eumenes II of Pergamon. One temple at this site contained a golden lamp by Callimachus and altars to Butes and Hephaestus. The main structure on this site has a gateway called the (*)** Propylaea, while another has draped female caryatids serving as supports in the projecting "porch of the maidens." One building in this location has a frieze depicting a Panathenaic procession, while another is the Erechtheum. Its main building, designed by Ictinus and Callicrates, once housed the Elgin marbles and a chryselephantine statue depicting the virgin Athena by Phidias. For 10 points, name this hill in Athens on which sits the Parthenon.
ANSWER: the **Acropolis** of Athens
<Tabachnick>

2. **This mathematician names the identity that *n* choose *k* equals the sum from *i* equals *k* to *n* of *i* minus 1 choose *k* minus 1. The statement that local extrema of functions have a vanishing first derivative is his theorem of stationary points. This mathematician used the method of descent to prove the *n* equals 4 case of one of his statements, and also stated that light rays travel to minimize the time taken, his principle of (*)** least time. Another law named for him states that for any *a* coprime to a prime *p*, *a* to the quantity *p* minus 1 is congruent to 1 mod *p*; that is his Little Theorem. For 10 points, identify this namesake of a theorem proven by Andrew Wiles, stating that for there are no integer solutions to *x* to the *n* plus *y* to the *n* equals *z* to the *n* for *n* greater than two—his namesake Last Theorem.
ANSWER: Pierre de **Fermat**
<Greenthal>

3. **One indigenous people of this country established a turquoise trade with a capital at Tollan. An earlier civilization in this country constructed the Temple of the Dancers during the Formative Period. A different archaeological site in this country has buildings that exemplify the slope-and-panel style and contains large buildings connected by the Avenue of the Dead. Yet another ancient city in this modern-day country contains numerous reclining figures called (*)** chacmools. One of its largest ancient cities contained the massive Pyramids of the Sun and Moon, and this country is also home to Monte Alban. This country is where one can find archaeological sites like Teotihuacan and Chichen Itza. For 10 points, name this modern-day country once home to Zapotec and Aztec civilizations.
ANSWER: **Mexico**
<Bentley>

4. **The myth surrounding the birth of this figure holds that he was conceived when a white elephant touched his mother's side in a dream. After this figure's birth, the seer Asita predicted that he could become great in one of two ways. A sick man and a corpse were among the four sights that inspired this man, also known as (*)** Shakyamuni, to become an ascetic. This man taught for the first time at the Deer Park in Benares, where he put forth the Four Noble Truths after meditating under a Bodhi tree and becoming enlightened. For 10 points, identify this Indian founder of an Asian religion whose sects include Theravada.
ANSWER: Siddhartha **Gautama** [or the **Buddha**]
<Angelo>

5. **One section of this work opens with a flute trill beneath a soft clarinet rhythm before heavy string beats intrude, later augmented by a tam-tam part. One section of this work has a large chord, combining an F-flat chord on the bottom and an E-flat seventh chord on top, pulse repeatedly with irregular accents. Its first part ends with a fanfare-laden (*)** "Dance of the Earth," while earlier sections include "Game of Abduction" and "Games of Rival Tribes." This piece opens with a solo bassoon straining in its upper registers and ends with a sacrifice in which a young woman dances herself to death. Subtitled "Pictures of Pagan Russia," for 10 points, name this ballet which caused riots at its 1913 premiere by Igor Stravinsky.
ANSWER: The *__Rite of Spring__* [or Le *__sacre du printemps__*]
<Tabachnick>

6. **This quantity for a compound is the geometric mean of this quantity for each atom in that compound according to its principle of equalization. Slater's rules and the covalent radius of an atom are used to calculate this quantity according to the Allred-Rochow scale. This quantity can be calculated by taking the arithmatic mean of the first (*)** ionization energy and electron affinity. Scales for this quantity, which increases with movement up and to the right on the periodic table, are named for Pauling and Mulliken. For 10 points, name this quantity that measures the affinity of an atom for electrons.
ANSWER: **electronegativity**
<Kirsch>

7. **In 2000, violence broke out in this country between Christians and the Islamic Defender Front, whose leader, Habib Riziq Shihab, was arrested in 2006. Detachment 88 fights terrorism in this country, where Abu Bakar Basyir was arrested in 2010 for allegedly plotting to assassinate its president. This country's government executed Imam Samudra and Ali Ghufron in 2008 for a nightclub bombing in Kuta perpetrated by the (*)** Jamaah Islamiah, which was also responsible for the 2004 Australian embassy bombing. In 2009, Susilo Yudhoyono was re-elected as this country's president, a position in which he dealt in 2010 with the eruptions of Mt. Merapi. For 10 points, name this country, which has seen recent bombings in Bali and in Jakarta.
ANSWER: Republic of **Indonesia**
<Haddad-Fonda>

8. **In Tibetan myth, the first people of Tibet were born after one of these animals mated with a stone demoness. The Toshogu shrine depicts three of these animals named Mizaru, Kikazaru, and Iwazaru. In the Ramayana, these animals create a bridge to Sri Lanka, and their king is** (*) Sugriva. Another of these animals in Hindu myth has the Vajra thrown at him by Indra after he attempts to swallow the sun as a child but is saved by his father, the wind god Vayu. That figure in this form becomes the companion to Rama. For 10 points, name this animal, a mythical example of which is Hanuman.
ANSWER: **monkeys**
<Bollinger>

9. **In one painting by this artist, the title figure is dressed all in blue and wears a wreath of roses, while wings of flowers are painted on the background behind him. This painter of** *Boy with a Pipe* **used yellow shades crisscrossed with black lines in paintings like** *Accordionist*. **He painted a woman wearing a green hat and a multicolored polka-dotted dress with a snout-like nose and a cat sitting on her chair; that portrait depicted his lover** (*) Dora Maar. He showed a man playing an instrument with folded legs and his head hunched below his shoulder in one work, while another shows five abstracted nude women and was influenced by African masks. For 10 points, name this painter of *The Old Guitarist* and *The Demoiselles of Avignon*, a proponent of Cubism.
ANSWER: Pablo Diego José Francisco de Paula Juan Nepomuceno María de los Remedios Cipriano de la Santísima Trinidad Ruiz y **Picasso**
<Tabachnick>

10. **Along with Chenery, this man introduced a special case production function that applies when the substitution effect is continually elastic. He later collaborated with Gerard Debreu to write a paper which proved the existence of a competitive equilibrium, which was crucial for GET. This author of** *The Limits of Organization* **later wrote** *Social Choice and Individual* (*) *Values*, in which he advanced a theorem which can be extended with the addition of Pareto Optimality as a necessary condition. For 10 points, name this economist who posited that an intransitive social preference could not be derived from a set of transitive preferences, called his "Impossibility Theorem."
ANSWER: Kenneth **Arrow**
<Meade>

11. **One regent for this monarch was killed by some friends of George Wishart. In addition to Archbishop David Beaton, regents for this ruler included the Earl of Arran. One plot supporting this ruler ended up with Bernardino de Mendoza getting deported and Francis Throckmorton burned at the stake. Following the events of Black Saturday, this monarch sought exile in** (*) France at the court of Henry II. This monarch abdicated after the Encounter of Carberry Hill. A scheme that would put this monarch on the throne was discovered by Francis Walsingham in the Babington Plot, and this heir of James V was once married to Lord Darnley. She was ultimately beheaded in 1567. For 10 points, name this Scottish rival to Elizabeth I.
ANSWER: **Mary, Queen of Scots** [or **Mary Stuart**; or **Mary Stewart**; or **Mary I** of Scotland; prompt on partial answer; do not accept "Bloody Mary"]
<Bentley>

12. **This novel contains its author's "Edwin and Angelina. A Ballad" in one of its chapters, and one character in this work accepts a commission to join a regiment in the West Indies after he is falsely accused of killing the servant Baxter. One character fancies city life as a companion to Ms. Carolina Skeggs, and that character is saved from drowning by a man who poses as Mr. (*)** Burchell. The title character ends up in debtor's prison after his house burns down, but he recovers his wealth and sees the marriage of his daughter Sophia to William Thornhill and of his son George to Arabella Wilmot. For 10 points, identify this novel about the tribulations of the Primrose family, by Oliver Goldsmith.
ANSWER: The **_Vicar of Wakefield_**
<Gautam Kandlikar>

13. **Coleman and Weinberg developed a four-dimensional extension to a theory of this phenomenon whose namesake parameter is the penetration depth over coherence length. That theory, named for (*)** Ginzberg and Landau, is contrasted with the microscopic theory of this phenomenon, which focuses on the condensation of electrons into phonon-exchanging pairs. This phenomenon, described by BCS theory and discovered by Heike Kamerlingh Onnes, is exemplified by materials like YBCO. For 10 points, name this low-temperature phenomenon, the onset of zero resistance.
ANSWER: **superconductivity** [accept word forms]
<Watkins>

14. **His esoteric supporters included the Russian-born French lecturer Alexandre Kojève. He created categories that he called the three "spheres" of the abstract, morality, and ethical life in one work. He described a form of custom called _Sittlichkeit_, coined the term _Zeitgeist_, and described a process ending with the _Geist,_ or World (*)** Spirit, coming to know itself. This author of _The Science of Logic_ and _Elements of the Philosophy of Right_ idolized his native Prussia. For 10 points, name this absolute idealist who formulated the law of dialectic in _The Phenomenology of Spirit._
ANSWER: Georg Wilhelm Friedrich **Hegel**
<Jackson>

15. **In exchange for an electoral vote from Louisiana, this man appointed James Brown as minister to France. William H. Crawford refused this president's invitation to continue in his post as Secretary of the Treasury, so this president appointed Richard Rush instead. This man's numerous presentations of anti-slavery petitions led to the repeal of the gag rules. He was the American namesake of the (*)** Transcontinental Treaty, which ceded Florida to the United States in 1819, and he defended the African captives in the _Amistad_ case. He made Henry Clay his secretary of state as part of the so-called Corrupt Bargain. For 10 points, name this sixth president of the United States, son of the second president.
ANSWER: **J**ohn **Q**uincy **Adams** [prompt on **Adams**; do not accept or prompt on "John Adams"]
<Bentley>

16. **In one of this author's stories, Vincent Moon is marked with a crescent scar after selling out an Irish revolutionary. In another of his stories, a wizard dreams up a son, but later realizes he is a dream himself. This author of "The Form of the Sword" and "The Circular Ruins" also created a character outraged that his landlords, Zunino and Zungri, will tear down his house. In that story, the narrator concludes that the "true" title object lies in a pillar at a (*)** mosque at Cairo and is bored by the recitation of the poem "The Earth" by Carlos Argentino Daneri. This author wrote about a point containing all other points in "The Aleph." For 10 points, name this blind Argentine writer of *The Garden of Forking Paths*.
ANSWER: Jorge Luis **Borges**
<Bollinger>

17. **Cell bodies in which this substance has not yet been synthesized are called etioplasts. The synthesis of this substance is stimulated by cytokinin and can be inhibited by iron deficiency. Its catabolism is accompanied by an increase in pheophytin a and results in its conversion into a set of tetrapyrrole compounds. This porphyrin contains a central (*)** magnesium ion, and its "E" type is found only in two species of golden algae. It is located in structures that are arranged in grana, thylakoids, where it is arranged with protein complexes called photosystems. For 10 points, name this green plant pigment that helps capture light energy.
ANSWER: **chlorophyll**
<Kirsch>

18. **In one scene from this novel, Lewandowski makes love to his wife on his hospital bed while his friends stand with their backs turned. In this novel, a chronic bedwetter is given a hammock below another bedwetter to cure his habit. The protagonist of this novel swims naked across a canal with Lee and Kropp to rendezvous with three French women. That protagonist feels guilt over killing Gerard (*)** Duval. Another character, Franz Kemmerich, has his leg amputated and gives his boots to Müller. Katczinsky is killed by a splinter while being carried by the narrator of this novel. For 10 points, name this novel about Paul Bäumer's experience in World War I, written by Erich Maria Remarque.
ANSWER: ***All Quiet on the Western Front**_
<Nediger>

19. **The losers in this conflict put faith in a machine gun called the mitrailleuse, while the winning side used Krupp steel to improve their field rifles. The losing side in this conflict disastrously split up its army following a defeat at the Battle of Froeschwiller, also called the Battle of Worth. The pivotal battle in this conflict saw a failed attempt to relieve troops under Bazaine by Marshal Patrice (*)** Mac-Mahon. Prior to the outbreak of this war, Prince Leopold would have succeeded Isabella II on the throne of Spain. The victor in this war had earlier defeated Austria in the Seven Weeks' War, and this war was sparked by the Ems Telegram. It witnessed the Battle of Sedan and brought down the Second Empire. For 10 points, name this 1870 conflict between states led by Napoleon III and Otto von Bismarck.
ANSWER: **Franco-Prussian** War [or **Franco-German** War; accept **1870 War** until mentioned]
<Bentley>

20. **One villanelle by this poet contains the refrains "I shut my eyes and all the world drops dead" and "I think I made you up inside my head." The speaker of another poem by this author of "Mad Girl's Love Song" manages to die "one year in every ten," but rises "out of the ash" with "red hair" to "eat men like air." This author of (*)** "Lady Lazarus" also wrote a poem, whose subject has a "stake" in his "fat black heart" and has been replaced by a "man in black with a Meinkampf look," Ted Hughes. This author of the collection *Ariel* also wrote a novel in which Esther undergoes electric shock therapy. For 10 points, name this woman, who wrote "Daddy" and *The Bell Jar*.
ANSWR: Sylvia **Plath** [or Victoria **Lucas** before it is read]
<Angelo>

21. **A maid in this play named Nana exclaims, "It's God, He's punishing us again!" when she sees a newspaper headline announcing war in the Balkans. One character in this play quits the League of Humanity and becomes engaged to Domin. Another character is kept alive so that he can recreate a certain formula, but he is impressed by the love between (*)** Primus and Helena and refuses to dissect them. That character, Alquist, is the only human left alive by the revolution of the title characters. For 10 points, name this Karel Capek play which introduced the word "robot."
ANSWER: **R.U.R**. [or **Rossum's Universal Robots**; or **Rossumovi univerzální roboti**]
<Nediger>

22. **This action was largely carried out by some seventeen hundred newly created peace arbitrators. Dissatisfaction with the results of this event led to the Bezdna Unrest. An earlier attempt at accomplishing its main goal was spearheaded by Pavel Kiselyov. One key player in this event was Nikolay Milyutin, who also established the (*)** *zemstvo* system. It took three additional years to apply to Georgia. Alexander Herzen spoke out in favor of this event. The beneficiaries of this event were given land allotments, though they had to pay redemption payments, which were cancelled in 1907. For 10 points, name this 1861 event in which Alexander II freed some peasants.
ANSWER: 1861 Russian **emancipation of the serfs** [or **Emancipation Reform** of 1861; accept **Peasant Reform** of 1861 until the end of the question]
<Nediger>

23. **One modern group in this phylum possessing single-branched appendages is called** *Uniramia*. **Different body plan arrangements in members of this phylum are called tagmata, and members of this phylum possess an excretory system consisting of hemolymph-bathed channels called (*)** Malphigian tubules. Members of this phylum may possess ocelli or ommatidia for visual perception. A waxy outer layer helps protect these creatures' inner "procuticle," the chitin-containing layers of their exoskeletons. Members of this phylum also possess jointed appendages and a three-segment body plan. For 10 points, name this phylum that includes crabs, spiders, and insects.
ANSWER: **Arthropod**a
<Kirsch>

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Packet 6

Bonuses

1. This process may be carried out simply to separate liquids from solids or oils. For 10 points
each:
[10] Name this purification technique, which is applied to separate substances with different
boiling points.
ANSWER: **distillation**
[10] Fractional distillation is a more rigorous technique employing multiple vaporization and
condensation cycles used when the substances in question have more similar boiling points. Each
vaporization-condensation cycle is given this name.
ANSWER: **theoretical plate**
[10] Air-sensitive compounds may be vacuum distilled using this apparatus, named for its
arrangement of three glass or Teflon taps.
ANSWER: **Perkin triangle**
<Watkins>

2. Identify some lovers of Greek goddesses for 10 points each.
[10] This youth was loved by both Aphrodite and Persephone before being killed by a wild boar
while hunting, leading to the creation of the anenome.
ANSWER: **Adonis**
[10] This Lapith attempted to seduce Hera and was punished by being tied to a fiery wheel.
ANSWER: **Ixion**
[10] Eos forgot to ask for eternal youth when she convinced Zeus to grant this man immortality,
causing him to shrivel into not much more than a voice.
ANSWER: **Tithonus**
<Angelo>

3. This man deposed Lon Nol, called himself "Brother Number One," and converted the Chao
Ponhea Yat High School into Security Prison 21. For 10 points each:
[10] Name this man who forced city residents, or "April 17 people," to work in the fields under
horrific conditions.
ANSWER: Pol **Pot** [or Saloth **Sar**]
[10] Pol Pot was the head of the Khmer Rouge, which held power in this modern-day country in
Southeast Asia.
ANSWER: **Cambodia**
[10] North Vietnamese troops marching to the Battle of An Loc during the Easter Offensive
departed from bases in Cambodia. The Easter Offensive was countered by a U.S. bombing
campaign with this football-inspired name.
ANSWER: Operation **Linebacker**
<Bollinger>

4. Amore explains to this character a condition he must not violate if he is to rescue Eurydice in an opera with music by Cristoph Glück. For 10 points each:

[10] Name this mythical figure who titles another opera that includes the *Galop Infernal*, better known as the can-can.

ANSWER: **Orpheus** [or **Orfeo**; or **Orfée**]

[10] An earlier opera about Orpheus is *L'Orfeo*, written by this Baroque Italian composer who produced *L'Arianna* during his tenure as director of music for St. Mark's Basilica.

ANSWER: Claudio Giovanni Antonio **Monteverdi**

[10] In this Monteverdi opera, the title character is the fiancée of Ottone, but ends up with Emperor Nero instead.

ANSWER: *The **Coronation of Poppea*** [or *L'**incoronazione di Poppea***]

<Gupta>

5. Answer some questions about Judaism in philosophy, for 10 points each:

[10] This author of *Tractatus Theologico-Politicus* was exiled from Amsterdam's Jewry for the pantheistic views he later wrote down in a work that used geometric logic, his *Ethics*.

ANSWER: Benedict **Spinoza** [or Baruch **Spinoza**]

[10] This exiled rabbi of Islamic Spain included "perfect faith in the coming of the Messiah" in his 13 articles of faith. His other work included the *Mishneh Torah* and *Guide for the Perplexed.*

ANSWER: **Maimonides** [or Rabbi Moshe [or Moses] **ben Maimon**; or **Rambam**]

[10] This Jewish existentialist philosopher of dialogue fled Germany for pre-Israel Palestine. He denigrated the impersonal "I-It" relationship in his major work *I and Thou.*

ANSWER: Martin **Buber**

<Jackson>

6. The protagonist of this novel is motivated by the sentence "Don't let the bastards grind you down." For points each:

10] Name this novel, set in the Republic of Gilead, in which Offred is forced to work in the title profession.

ANSWER: *The **Handmaid's Tale***

[10] *The Handmaid's Tale* was written by this Canadian author of *The Blind Assassin* and *Oryx and Crake*.

ANSWER: Margaret **Atwood**

[10] *Oryx and Crake* was followed by this recent sequel, in which Adam One, the leader of God's Gardeners, predicts the title disaster.

ANSWER: *The **Year of the Flood***

<Nediger>

7. The investigation into this scandal was led by Attorney General Edwin Meese, whom some accused of spearheading with the intent of downplaying the president's involvement. For 10 points each:
[10] Name this scheme in which funds derived from a secret arms-for-hostages deal were secretly funneled to support anti-Sandinista rebels in Nicaragua.
ANSWER: **Iran-Contra** Affair
[10] President Reagan's address on Iran-Contra fingered National Security Advisor John Poindexter and this lieutenant colonel as the brains behind the operation.
ANSWER: Oliver Laurence **North**
[10] Iran-Contra occurred in direct violation of this rider to the Defense Appropriations Act, which specifically prohibited the government from directly funding the Contras.
ANSWER: **Boland** Amendment
<Wynne>

8. The composer of this piece styled it a symphony, not a viola concerto, which upset Niccolò Paganini. For 10 points each:
[10] Name this work in which the viola represents a Lord Byron character traveling through the mountains of a certain country. It ends with an *Orgy of Brigands*.
ANSWER: *__Harold in Italy__* [or *__Harold en Italie__*; or *__Symphony in Four Parts with Viola Obbligato__*]
[10] This composer of *Symphonie Fantastique* wrote *Harold in Italy*.
ANSWER: Hector **Berlioz**
[10] This fourth section of *Symphonie Fantastique* culminates in a guillotine falling on the head of the artist, who had murdered his paramour.
ANSWER: *__March to the Scaffold__* [or *__Marche au supplice__*]
<Tabachnick>

9. One of the tenets of this school of psychology is unconditional positive regard, in which the psychologist reflects positive feeling back at the patient no matter what they say. For 10 points each:
[10] Name this humanistic psychological method.
ANSWER: **c**lient **c**entered **t**herapy
[10] Client-centered therapy was developed by this psychologist who also discussed the difference between the real and ideal selves.
ANSWER: Carl **Rogers**
[10] Carl Rogers fully expounded upon client centered therapy in this book, his most famous, which contained its 19 foundational propositions.
ANSWER: *__On Becoming a Person__*
<Meade>

10. Lily Briscoe paints two members of the central family of this novel. For 10 points each:
[10] Name this novel in three parts set in the Ramsay family's house in the Hebrides, near the title location.
ANSWER: _**To the Lighthouse**_
[10 This author of *To the Lighthouse* and *Mrs. Dalloway*, a member of the Bloomsbury Group, also wrote a work in which Bartholomew Oliver watches a pageant about English history at Pointz Hall, *Between the Acts*.
ANSWER: Virginia **Woolf**
[10] In this experimental Woolf novel, six friends speak in soliloquies about their friend Percival.
ANSWER: *The **Waves***
<Angelo>

11. Although it was directly caused by the fungus *Phytophthora infestans*, it was exacerbated by British requirements for subdivisions of land and monoculture fields. For 10 points each:
[10] Identify this disaster that resulted in a large population decline in a country with a capital at Dublin.
ANSWER: The Great **Irish Potato Famine** [or **Great Potato Famine**; or **Famine of 1845**-1849; or an **Gorta Mor**; or an **Drochshaol**]
[10] Although Lord John Russell didn't do much to relieve the Irish Potato Famine, the government of this prime minister, Russell's predecessor, did offer some humanitarian aid. During his tenure, the Corn Laws were repealed.
ANSWER: Sir Robert **Peel**
[10] Only a few of those affected by the potato famine could find relief in these dismal places, established by the Poor Law. Families were split up when entering these homes, and men were usually made to break stones for 10 hours a day.
ANSWER: **workhouses** [do not accept "poorhouses"]
<Bentley>

12. For 10 points each, answer these questions about World Heritage Sites in Europe that are related to mining.
[10] Tourists to this country flock to the underground chapel carved out of salt in the Wieliczka Salt Mine, which is located just outside of Krakow.
ANSWER: Republic of **Poland**
[10] The Romans mined gold near Ponferrada in this country by washing the hillside with water, an early technique of hydraulic mining that required them to build seven aqueducts here. Today, much of the mining in this country occurs in the mountains of Cantabria and Asturias.
ANSWER: Kingdom of **Spain**
[10] The Neolithic flint mines of Spiennes, located in this country's city of Mons, attract tourists who want to see how axes were once made.
ANSWER: Kingdom of **Belgium**
<Haddad-Fonda>

13. This doctrine, widely held by Calvinists, holds that exactly 144,000 people will be uplifted to heaven after the Judgment. For 10 points each:
[10] Name this Christian doctrine.
ANSWER: **predestination**
[10] This theological thinker, who founded the Methodist church, sharply differed from the Calvinists over predestination.
ANSWER: John **Wesley**
[10] John Wesley used this method of scriptural interpretation in establishing the Methodist church, which draws upon Scripture, Tradition, Reason, and Experience.
ANSWER: Wesleyan **Quadrilateral**
<Meade>

14. Name some artists who painted portraits of women, for 10 points each.
[10] This American scandalously depicted Virginie Gautreau in a black dress in his *Madame X*.
ANSWER: John Singer **Sargent**
[10] This artist painted a woman reclining on a couch with her back and face to the viewer in his *Portrait of Madame Récamier*. His other works include *The Coronation of Napoleon* and *Napoleon Crossing the Alps*.
ANSWER: Jacques-Louis **David**
[10] As a pun on the sitter's name, this man put juniper trees in his portrait of Ginevra de' Benci, who looks sullenly at the viewer. It was one of the first portraits in a three-quarters pose.
ANSWER: **Leonardo da Vinci** [accept either]
<Tabachnick>

15. At the end of this process, a cell bursts following the creation and assembly of viral genetic material and proteins. For 10 points each:
[10] Name this viral reproduction cycle that culminates in the destruction of the infected host cell.
ANSWER: **lytic** cycle
[10] This bacteriophage that infects *E. coli* can only undergo the lytic cycle.
ANSWER: **T4** bacteriophage
[10] This other *E. coli*-infecting phage can undergo either the lytic or lysogenic pathway in the presence of either CII ("see two") or CI ("see one") protein, respectively. It infects *E. coli* via a namesake B receptor.
ANSWER: Enterobacteria phage **lambda**
<Kirsch>

16. The protagonist of this novel has a bout of tuberculosis on a boat to Tunisia. For 10 points each:
[10] Name this novel about Michel, who begins to neglect Marceline to pursue young boys, to the point that he merely watches while she dies sputtering blood.
ANSWER: The *__Immoralist__* [or *__L'Immoraliste__*]
[10] *The Immoralist* was written by this French author of *The Counterfeiters*.
ANSWER: Andre **Gide**
[10] Gide is often classified as a "decadent" author, a term also applied to this author of "The Ballad of Reading Gaol" and *The Picture of Dorian Gray*.
ANSWER: Oscar **Wilde**
<Nediger>

17. During this event, both Probus and Hypatius were proclaimed emperor by the mob. For 10 points each:
[10] Identify this event that stemmed from rivalries between the Blue and Green factions.
ANSWER: **Nika** Revolt [or **Nika** Riots or **Nika** Insurrection]
[10] The Nika Revolt took place during the reign of Justinian and his wife Theodora, two rulers of this empire. This empire would finally fall to the Ottomans under Mehmet II, who renamed its capital to be Istanbul.
ANSWER: **Byzantine** Empire [or **Eastern Roman** Empire]
[10] Along with Mundus and the eunuch Narses, this general help put down the Nika Revolt. He'd later defeat the Vandals in North Africa and was offered the chance to be Emperor of Rome by the Ostrogoths.
ANSWER: Flavius **Belisarius**
<Bentley>

18. In general, this law states that the emf is equal to the current multiplied by the resistance. For 10 points each:
[10] Name this law most commonly expressed as V equals IR.
ANSWER: **Ohm**'s law
[10] In AC versions of Ohm's law, the resistance is replaced by this complex analog that adds the resistance to the capacitive and inductive reactances.
ANSWER: **impedance**
[10] The average power in an AC circuit is equal to this function of voltage and current; that power can also be found by multiplying the voltage by the current and the ratio of resistance to impedance.
ANSWER: **dot product**
<Wynne>

19. For 10 points each, name these techniques from calculus.
[10] The definite form of this operation produces a value that for nonnegative functions of one variable can be interpreted as the area between the function's graph and the x-axis.
ANSWER: Riemann **integration** [accept word forms, e.g. **integral**]
[10] This integration technique, generally applied to certain types of rational functions, involves factoring the denominator and using each factor as the denominator of a new rational function.
ANSWER: integration by **partial fraction**s
[10] This eponymous method, used to optimize a function of several variables subject to a given constraint, sets the function's gradient equal to a constant times the constraint's gradient.
ANSWER: method of **Lagrange multiplier**s
<Greenthal>

20. Identify these American writers of major trilogies, for 10 points each:
[10] This author of *The Pit* never finished his Epic of Wheat trilogy, which began with *The Octopus*. He also wrote *McTeague*.
ANSWER: Frank **Norris**
[10] This author created Frank Cowperwood, who watches a lobster battle a squid in *The Financier* and also appears in *The Titan* and *The Stoic*. He's probably better known for works like *Jennie Gerhardt*, *An American Tragedy*, and *Sister Carrie*.
ANSWER: Theodore **Dreiser**
[10] *Judgement Day* concludes this author's most famous work, a trilogy about burly Chicago teenager Studs Lonigan.
ANSWER: James Thomas **Farrell**
<Ray>

21. The title character of one of this man's works is interviewed by Bartley Hubbard and accidentally burns down his house in Back Bay. For 10 points each:
[10] Name this nineteenth-century American author of *The Rise of Silas Lapham*. He wrote about the architect Theodore Colville, who marries the widow Lina Bowen, in *Indian Summer*.
ANSWER: William Dean **Howells**
[10] Howells was an early author of this genre of literature, which seeks to depict life as it objectively is. This genre gave rise to naturalism.
ANSWER: **realism**
[10] This other American realist wrote about the exploitation of Tim Haskins in "Under the Lion's Paw," and about Will Hannan's love for Agnes Dingman in "A Branch Road." Those stories are part of his collection *Main-Travelled Roads*.
ANSWER: Hamlin **Garland**
<Bollinger>

22. For 10 points each, name some classes of stars.
[10] The period-luminosity relationship for this class of variable stars allows them to be used as standard candles. They are genrally brighter and of higher mass than RR Lyrae variables. Classical ones are yellow supergiants.
ANSWER: **Cepheid** variables
[10] Cepheid variables are generally part of this stellar population. These young stars have relatively high metallicity, though "metallicity" refers to atomic numbers over two rather than proper metals..
ANSWER: Population **I** ("one")
[10] While classical Cepheids are yellow supergiants, many stars of this stellar class can be variable stars too. This small, hot class of stars is the endpoint of stellar evolution for low-mass stars.
ANSWER: **white dwarf**s
<Watkins>

23. Answer some questions about some superficially related organizations from American history for 10 points each.
[10] This was the only state that the Anti-Masonic Party carried in the presidential election of 1832. Confederates orchestrated the St. Albans Raid in this state, the northernmost such attack of the war.
ANSWER: **Vermont**
[10] The Anti-Defamation League has long accused this religious leader of being anti-Semitic. Nathan Pearlmutter called this successor of Elijah Muhammad "Black Hitler" for anti-Jewish remarks made in 1984.
ANSWER: Louis **Farrakhan** [or Louis Eugene **Walcott**; or **Louis X**]
[10] One of the bigger names to join the Anti-Imperialist League was this Scottish-born industrialist, whose Pittsburgh-based steel company was bought out by J. P. Morgan for $480 million.
ANSWER: Andrew **Carnegie**
<Bentley>