

2015 NSC - Official Scoresheet

Round	08	Room	
Bracket			
Reader			

Team									Team								
Player Names																	
Q#					Bonus	Steals	Ques. Total	Run. Score					Bonus	Steals	Ques. Total	Run. score	
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TB2																	
TB3																	
SD																	
Player 20s																	
Player 10s																	
Point totals																	
Final score																	
	Substitutions before Tossup 11								Substitutions before Tossup 11								
	Out:				In:				Out:				In:				
	Out:				In:				Out:				In:				

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

RH	RS	BH	BS	Left	Right	BH	BS	RH	RS
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PACE NSC 2015 - Round 08 - Tossups

1. This man terrorizes the island of Paros until its inhabitants agree to hand over two grandsons of Minos to serve as his companions. This man bursts out of the shackles placed upon him by Busiris, an Egyptian king who sacrifices all visitors to his realm. This man is cheated out of one-tenth of the cattle promised to him by a king whom he deposes and replaces with Phyleus. This man gets his toe pinched by a crab during a fight in which he tells his (*) nephew Iolaus use a torch to cauterize several stumps. In another adventure, this man diverts two rivers. To atone for murdering his own family, this man helps a king who hides in a bronze jar, Eurystheus, by cleaning the Augean stables and killing the Hydra. For 10 points, name this Greek hero who completes Twelve Labors.

ANSWER: Heracles [or Hercules] <Jose>

2. This man promoted the use of his family's heraldic crest, consisting of grey wolves flanking a cooking pot. This man traced the turning point in his life to when he read a book by Ludolph of Saxony in his family's meager library. That happened while this man recovered from a botched surgery after suffering a leg wound at the siege of Pamplona. This man advocated going on a month-long secular retreat while reading his book of (*) prayers and meditations, and penned a set of *Constitutions* excluding female participation in his order and making his disciples swear allegiance to the Pope. Francis Xavier continued this man's work by leading missions into Asia. For 10 points, name this author of *Spiritual Exercises*, the founder of the Jesuits.

ANSWER: Saint Ignatius of Loyola [accept either underlined part; or Ignacio de Loyola] <Bentley>

3. A leader of this country killed thousands of supporters of Imam al-Hadi by bombing Aba Island, and executed a scholar who advocated "the second message of Islam," Mahmoud Taha. This country's opposition Umma Party developed from its Ansar movement, which reveres a 19th-century religious figure. John Garang founded this country's People's Liberation Army in response to Jaafar Nimeiri's imposition of (*) sharia law. A 2005 "Comprehensive Peace Agreement" ended this country's second civil war, and led to a referendum that created a state led by Salva Kiir. The International Criminal Court indicted this country's president, Omar al-Bashir, for his role in the Darfur conflict. For 10 points, name this African country whose south seceded in 2011.

ANSWER: Republic of the Sudan [or Jumhuriyat as-Sudan] <Yu>

4. This man expressed a desire to "unsphere / the spirit of Plato to unfold / what worlds or what vast regions hold / the immortal mind" in a poem that features invocations of Saturn, Vesta, and Urania. He declares "Mirth, with thee I mean to live" at the end of one poem, while in that poem's companion, he dismissed "vain deluding joys" in favor of "divinest Melancholy". In a non-fiction work, this man asserted that "he who destroys a good (*) book, kills reason itself." He coined the phrase "they also serve who only stand and wait" in a sonnet that begins with the line "When I consider how my light is spent" and reflects on his blindness. For 10 points, name this author of "L'Allegro" and "Il Penseroso", as well as *Areopagitica* and the epic poem *Paradise Lost*.

ANSWER: John Milton <Cheng>

5. The second movement of this composer's piano concerto is an "Intermezzo: Andantino Grazioso" which transitions directly into the finale after a return of a theme from the "Allegro affetuoso" first movement. A song cycle by this composer ends with the speaker planning to put all his old bitter songs into a coffin. He composed two *Liederkreise* as well as (*) *Dichterliebe* in 1840, which is known as his "Year of Song." Like Grieg, this composer's only piano concerto is in A minor, and his *Symphony No. 3* was apocryphally inspired by a viewing of Cologne Cathedral. For 10 points, name this German composer of *Scenes from Childhood*, *Carnaval*, and the *Rhenish Symphony*, who wrote his piano concerto for his wife Clara.

ANSWER: Robert Schumann <Rosenberg>

6. A material demonstrating this phenomenon appears to decrease in weight in a Gouy balance. An electron in 2D orbit around a nucleus demonstrates this phenomenon due to Larmor precession, with a magnitude proportional to the radius squared over six times the mass. This phenomenon explains the strong downfield shift of aromatic compounds' ring currents in proton NMR. A normal conductor cooled into superconducting state displays the (*) perfect form of this phenomenon, with a susceptibility of negative one. This phenomenon occurs if all electrons in a material are paired. This behavior could be used to accomplish levitation because it causes materials to repel all B fields. For 10 points, name this type of magnetism contrasted with paramagnetism and ferromagnetism.

ANSWER: diamagnetism [prompt on magnetism] <Silverman>

7. A character in this novel loses the right to marry a farmer's daughter when the farmer realizes he eats more than his work is worth, and is commonly referred to as "the idiot". One of its characters is tricked into wearing a headband that can be tightened at will by another character. In a scene from this novel, the protagonist urinates on one of five huge pink pillars, only to learn that he's on a giant (*) hand. Supporting characters in this novel include a man who transforms into a monster, haunting a river after smashing a crystal goblet, and the lecherous wielder of the nine-toothed iron rake, respectively known as Sandy and Pigsy. For 10 points, name this classical Chinese novel in which Xuanzang (shoo-wen-zahng) is accompanied by Sun Wukong, the Monkey King, on a trip to India.

ANSWER: Journey to the West [or *Xi You Ji*; or *Hsi-yu Chi*] <Gupta>

8. One pathogen affecting these non-feline organisms is the Friend virus, a serotype of a namesake leukemia virus. A type of this organism with defective myelin is called its "shiverer" strain. The BALB/c strain of these animals is frequently used to create monoclonal antibodies. Behavior known as barbering is often observed in females of this species, who will remove vibrissae and hair from subordinates. The 2007 Nobel Prize was awarded to the researchers who developed this animal's (*) knockout type. An albino strain of this creature's *Mus musculus* species is a common model organism in labs. The "house" type of this mammal is a common pest. For 10 points, name these small murine rodents related to rats.

ANSWER: mouse [or house mouse; or *Mus musculus* or *M. musculus* before they are read] <Smart>

9. Stucco sculptures by Antonio Raggi and Leonardo Retti are interspersed with a painting covering one of these things titled *The Triumph of the Sacred Name of Jesus* by Giovanni Battista Gaulli. Andrea Pozzo's Baroque masterpiece *The Glory of St. Ignatius Loyola and the Missionary Work of the Jesuits* covers one of these things. In a trompe-l'oeil (tromp-leh-ee) painting covering one of these places, putti (POO-tee) stand around a (*) circular opening; that painting was executed by Andrea Mantegna for the Camera degli (DAY-ye) Sposi. A painting that covers one of these places contains an image of the title figure joining his index finger to that of God. For 10 points, name these parts of a room, one of which features Michelangelo's *The Creation of Adam* and is located in the Sistine Chapel.

ANSWER: ceiling [or dome or nave; prompt on room or church or chapel] <Bentley>

10. In a book about this thinker, Edmund Leach criticized him for obscurantism and for spending only a few weeks at each field site. This thinker applied "normal-transformed" and "culture-nature" axes to a construct that was modeled on Roman Jakobson's primary vowel-consonant triangle. That construct is the culinary triangle. He noted that trickster gods tend to play a mediating role as part of his analysis of (*) mythemes. This anthropologist rejected the distinction between totemism and caste in a work that described the title entity as one that builds with the materials at its disposal, a bricoleur. For 10 points, name this French structural anthropologist who included *The Raw and the Cooked* in *Mythologiques* and wrote *The Savage Mind*.

ANSWER: Claude Lévi-Strauss <Kothari>

11. The relative energy shift in the Kundig experiment is proportional to this quantity squared for the absorber. This quantity was sinusoidally varied by a loudspeaker for the radiation source in the Pound-Rebka experiment. For a galaxy, the total value for this quantity equals its "peculiar" form plus H-nought times distance. This quantity multiplies the cosine of the angle between the emitter and receiver in a (*) transverse effect predicted by special relativity. The change in frequency equals the emitted frequency times a ratio of this quantity. If the radial form of this quantity is increasing, then a redshift is seen. For 10 points, name this quantity which causes a Doppler shift if it's different for the source and emitter, and equals the product of wavelength and frequency of a wave.

ANSWER: wave velocity [or source velocity; or radial velocity; or speed] <Silverman>

12. A work by this man claims that "life is a self-evolving" one of the title things, of which the horizon is the second and the eye the first. This author examined "essences unchanged by man" that make up the "NOT ME" in an eight-part essay, and criticized "faith that stands on authority" in an essay about a concept "within which every man's particular being is contained." He wrote a passage in which "all mean egotism vanishes" as the speaker becomes like a (*) "transparent eyeball". In another essay, he asserted that "a foolish consistency is the hobgoblin of little minds" and urged the reader to "trust thyself". For 10 points, name this author of "Circles", "The Over-Soul", and "Self-Reliance", whose essay "Nature" outlines the foundations of Transcendentalism.

ANSWER: Ralph Waldo Emerson <Carson>

13. This species is disproportionated by reacting with sodium hydroxide in the Hooker process. In the classic example of the reactivity-selectivity principle, this molecule abstracts any hydrogen from a hydrocarbon. Addition of this species to carbon monoxide makes phosgene. This oxidizing agent forms when acid reacts with bleach. Homolytic bond cleavage of this molecule is the first step in the Born-Haber cycle for (*) table salt. It forms at the anode when brine is electrolyzed. Before Zyklon B and mustard gas, Fritz Haber weaponized this molecule for the Germans in World War I. For 10 points, name this molecule which is added to water to sterilize it, a diatomic yellow poisonous gas composed of the second halogen.

ANSWER: chlorine gas [or Cl₂] <Silverman>

14. The mother of all of these animals is often pictured on posters with mountains making up her legs and gods making up her eyes and shoulders. The earth-goddess Prithvi, who worked with Prithu to overcome a famine, took this animal form. These animals are washed and decorated in temples on the eighth day of the month of Kartika, a holiday known as Gopastami. The (*) excrement of these animals is used as a fuel in many *pujas*, and is one of this animal's "five products," along with *ghee*. A white, male example of these animals is the mount of Shiva and is named Nandi. The *Law of Manu*, *Rig Veda*, and *Mahabharata* all prohibit killing this animal. For 10 points, name these animals that are sacred in Hinduism.

ANSWER: cows [or bulls; or cattle; or Bos taurus] <Gupta>

15. The LUBILOSA program sought to control these organisms with an isolate from *Metarhizium* fungus called "Green Muscle." A characteristic behavior of these animals results from a phase polymorphism in which serotonin accumulates in their brains, causing gregariousness. These animals return to Umuofia for the first time in many years in *Things Fall Apart*, allowing villagers to (*) catch them and roast them in clay pots. In a novel partly named for this arthropod, Tod Hackett falls in love with the starlet Faye Greener; that novel by Nathanael West is set in Hollywood. In the film *Days of Heaven*, these insects destroy the farmer's wheat field. For 10 points, name these insects, a phase of many short-horned grasshoppers, that form swarms.

ANSWER: locusts [prompt on grasshoppers or Caelifera; prompt on Acrididae] <Kothari>

16. In 2012, this city completed work on a 58-story glass skyscraper with a roughly macaroni-shaped footprint called The Bow, which was designed by Norman Foster's firm. The 201 Red Line and 202 Blue Line, which make up this city's light-rail system, share a west-to-east track just north of this non-U.S. city's central Beltline neighborhood. In 2013, floods in this city caused the Bow and Elbow rivers to burst their banks. The southwesternmost (*) riding in this city is represented by Stephen Harper in the House of Commons. This city, about an hour and a half east of Banff National Park, is served by an airport with the code YYC and hosts an annual rodeo called the Stampede. For 10 points, name this city south of Edmonton, the most populous in Alberta.

ANSWER: Calgary, Alberta <Jackson>

17. Joan (HWAN) Gardy Artigas tiled a twenty-two meter-tall sculpture with a vulva-shaped opening of one of these non-human animals, which overlooks the Joan (HWAN) Miró park in Barcelona. For the front steps of the Philadelphia Museum of Art, Jacques Lipchitz sculpted one of these animals being strangled. Several sculptures of these animals never made it to a 1926 exhibition at the Brummer Gallery, curated by Marcel Duchamp. In seven marble and nine bronze sculptures of these animals, their creator reduced their (*) anatomical features to a simple slanted oval plane. Those sculptures of these animals by a Romanian were taxed by U.S. Customs officials who refused to believe they were art. For 10 points, name these animals depicted "in space" in a series by Constantin Brancusi.

ANSWER: birds [or Aves; accept vultures; accept condors; accept Accipitridae; accept Cathartidae; accept Bird in Space] <Gupta>

18. During the reign of Augustus and Tiberius, many of these objects were produced at Lugdunum. Participants in the Bar Kokhba revolt used a file to remove the original designs of these objects. Caracalla commissioned the *antonianus* type of these objects. Under Constantine, the *solidus* type of these objects was often replaced with the *pecunia* type. Standardization and reform of these objects was carried out by (*) Diocletian, who issued an edict that was heavily based on one of these objects called the *denarius*. The term for the study of these objects is derived from the Latin word *numismatis*. These objects, whose *aureus* type was made of gold, often contained a profile portrait of the emperor on the obverse. For 10 points, name these units of Roman currency.

ANSWER: Roman coins [or Roman coinage; accept antonianus before mentioned; accept solidus before mentioned; accept pecunia before mentioned; accept denarius before mentioned; accept aureus before mentioned] <Bentley>

19. A character in this novel joins a protest in Cambodia as part of his desire to be part of the Grand March of History. Its protagonist works as a window cleaner after twice refusing to retract an article he wrote about guilt, and repeatedly contemplates the German proverb "einmal ist keinmal" and the Beethoven quote "Es muss sein". Another character in this novel is a painter who declares a "war on kitsch" and wears her (*) grandfather's bowler hat while having sex. The protagonist's son Simon arranges his funeral after he dies in a car accident in this novel, in which the professor Franz has an affair with Sabina, who also sleeps with the protagonist. For 10 points, name this novel about Tereza and her womanizing husband Tomas, written by Milan Kundera.

ANSWER: *The Unbearable Lightness of Being* [or *Nesnesitelná lehkost bytí*] <Bentley>

20. It didn't happen in 1948, but newspapers during this election prematurely announced the victory in the Wisconsin primary of former basketball player Mo Udall. Frank Church and Jerry Brown led a movement called "anyone but" this election's winner. The loser of this election blundered by claiming that "there is no Soviet domination of Eastern Europe," overshadowing his opponent's admission in a (*) *Playboy* interview that he committed adultery in his heart. This election marked the last time that a Democrat won all the states in the Deep South. The incumbent going into this election, who never recovered from an unpopular pardon, lost to a dark horse candidate from Georgia. For 10 points, name this election which led to Jimmy Carter becoming president.

ANSWER: United States Presidential Election of 1976 [prompt on 76] <Gupta>

21. W.T. Yasso studied the half-hearted and crenulate shaped type of these structures, which resembles the logarithmic spiral shape. Plants that grow at these locations include *Honckenya peploides* and the grassleaf orache. The namesake "cusps" of these locations are marked alternating paths of horns and embayments. The sediment of these locations is refilled through "nourishment", and one can construct a revetment to reverse the loss of materials via (*) longshore drift at these locations. Sediment in these places is modified by standing waves, and water called swash weathers the rocks at them, including pebbles. For 10 points, name these locations along the coast which contain shoals and sand.

ANSWER: beaches [or seashores, lakeshores, or shorelines until "longshore drift" is read; prompt on coasts or seasides] <Jose>

22. A Wolfgang Amadeus Mozart piece in this genre suddenly interrupts the rondo finale with songlike minuet in the subdominant key of A-flat major. Mozart also wrote an A major piece in this genre whose second-movement Adagio in F-sharp minor is the only movement that Mozart ever wrote in that key. Mozart's C major twenty-first piece in this genre includes an F major Andante used prominently in the film (*) *Elvira Madigan*. A piece in this genre by Beethoven opens with three *tutti* chords from the orchestra, each followed by a brief cadenza from the soloist. That piece in E-flat major is his fifth and final piece in this genre, nicknamed *Emperor*. For 10 points, name these pieces for a keyboard soloist with orchestral accompaniment.

ANSWER: piano concertos [or piano concerti; prompt on concertos; prompt on concerti] <Kim>

23. The Committee of 25 was an influential group of businessmen in this city that engineered the campaign of Norris Poulson for mayor. Harrison Gray Otis founded the Merchants and Manufacturers Association to keep unions out of this city and published its major newspaper. He was succeeded as publisher by Harry Chandler, and together Otis and Chandler bought up land surrounding this city while another friend bought water rights in the (*) Owens Valley. Buildings in Chavez Ravine were razed initially for public housing here, but the land was sold to Walter O'Malley to build a stadium instead. William Mulholland oversaw the construction of an aqueduct through the San Fernando Valley to this city where the Brooklyn Dodgers moved in 1958. For 10 points, name this largest city in California.

ANSWER: Los Angeles, California [or L.A., California] <Bailey>

24. A character in this novel proclaims that "all human history moves toward one great goal" at the exact moment that a literal goal is scored in a nearby hockey game. A man tries to fend off the rotting ghost of his mother with a walking stick, only to destroy a chandelier, in a nightmarish chapter from this novel written as a play script. A long roman candle explodes in the sky at the end of a scene in which the protagonist spies on (*) Gertie MacDowell in this book's thirteenth chapter, "Nausicaa." The concert manager Blazes Boylan has an affair with the wife of this novel's protagonist, who continually crosses paths with Stephen Dedalus throughout his sojourns in Dublin. For 10 points, name this modernist novel about Leopold Bloom, written by James Joyce.

ANSWER: Ulysses <Gupta>



PACE NSC 2015 - Round 08 - Bonuses

1. This thinker wrote an exceedingly hard-to-read chapter describing how "independent and dependent self-consciousness" arise, which is often read as an encounter between master and slave. For 10 points each:

[10] Name this German philosopher who described history as a World Spirit, or *Geist*, coming to know itself. This Jena resident described property as an instance of "abstract right" in his *Elements of the Philosophy of Right*.

ANSWER: Georg Wilhelm Friedrich Hegel

[10] Hegel proposed that change occurs through this process, which Marxists defined as a thesis, opposed by a rival antithesis, resolving into a synthesis of the two.

ANSWER: dialectic [or dialectical materialism; or master-slave dialectic]

[10] Many modern academics put Hegel in the "absolute" subtype of this view that the thoughts of the individual are the basis of reality. Other Germans of the era, such as Friedrich Schelling and F.H. Jacobi, also held it.

ANSWER: idealism [or word forms such as idealist] <Jackson>

2. In January 2015, it was revealed that this man's death mask had been repaired with the wrong kind of glue. For 10 points each:

[10] Name this man whose tomb and elaborate gold death mask were discovered by Howard Carter in 1922 in Egypt's Valley of the Kings.

ANSWER: Tutankhamun [or King Tut]

[10] The eyebrows and eyeliner of the mask are made from this blue stone, which had to be imported from Afghanistan where it is still mined today. It is ground down to make the brilliant pigment ultramarine.

ANSWER: lapis lazuli

[10] For other parts of King Tut's mask, the Egyptians didn't have to look quite so far to get the "Sinai" variety of this greenish-blue stone. Over in the new world, it was mined from Chaco Canyon in New Mexico and used as currency by the Anasazi.

ANSWER: turquoise <Rosenberg>

3. This organelle consists of an amorphous mass made up of ninein and the calmodulin-binding protein PCMT, as well as two cartwheel-shaped structures containing tektin, cenexin, and centrin. For 10 points each:

[10] Name this organelle that serves as the main microtubule-organizing center of the animal cell. It is composed of two orthogonally-arranged centrioles.

ANSWER: centrosome

[10] Two centrosomes form during this cell division process which produces two identical, diploid cells.

ANSWER: mitosis

[10] The aforementioned amorphous mass, the pericentriolar material, contains the gamma isoform of this protein, whose alpha and beta forms are the building blocks of microtubules.

ANSWER: tubulin <Gupta>

4. On this day, Jason discovers that Miss Quentin has stolen his hidden cache of money in order to run off with a circus performer, while other characters listen to a sermon delivered by the Reverend Mr. Shegog. For 10 points each:

[10] Identify this day, during which the maid Dilsey takes her grandson Luster and Benjy Compson to her church.

ANSWER: **Easter** Sunday, 1928 [or **April 8**, 1928; prompt on **Sunday**]

[10] Easter Sunday, April 8, 1928 is the date during which the events of the final chapter take place in *The Sound and the Fury*, a novel by this author of *As I Lay Dying* and *Light in August*.

ANSWER: William **Faulkner** [or William Cuthbert **Faulkner**]

[10] The only other character who is particularly compassionate towards Benjy is this woman, his sister, who marries Herbert Head after being impregnated by someone, possibly Dalton Ames. Quentin is particularly obsessed with this character's virginity.

ANSWER: **Caddy** Compson [or **Candace** Compson; prompt on **Compson**] <Kim>

5. Name some things about the most interesting man in 19th century America, Charles Grandison Finney, for 10 points each.

[10] Finney coined the term for the "burned-over" district during this period in the 19th century when church membership soared. It is named in reference to a similar period of revival in the 18th century.

ANSWER: **Second Great Awakening** [prompt on **Great Awakening**]

[10] Finney served as the second president of this liberal arts university in Ohio that was among the first to admit black and women students.

ANSWER: **Oberlin** College

[10] Finney's preaching style was opposed by this man at the New Lebanon Conference. This first president of Lane Theological Seminary had a son named Henry Ward.

ANSWER: Lyman **Beecher** <Puma>

6. Identify the following about some works of art that are set in snowy environs, for 10 points each.

[10] This British artist set his painting of *Hannibal Crossing the Alps* during a snowstorm. He also painted *Dido Building Carthage*.

ANSWER: Joseph Mallord William **Turner**

[10] A group of this artist's family and neighbors, including his frequent model Helga, gather in a circle around a small tree on a pole in his *Snow Hill*. This American artist painted *Christina's World*.

ANSWER: Andrew **Wyeth**

[10] A carriage is moving towards the viewer after a snowstorm in this French artist's *Road to Versailles at Louveciennes* (**loov-syen**). He is best known for his vistas of urban street scenes, including a cycle of paintings of the Boulevard Montmartre in Paris.

ANSWER: Camille **Pissarro** [or Jacob-Abraham-Camille **Pissarro**] <Bentley>

7. Some scholars have pointed to the headdress of the Saka king on the Behistun Inscription as evidence that the Scythians and Cimmerians make up most or all of this group. For 10 points each:

[10] Name these people who traced their descent from Asher, Dan, Ephraim, Gad, Issachar, Manasseh, Naphtali, Reuben, Simeon, and Zebulun. They drop out of the historical record after the 722 BCE conquest of the Kingdom of Israel.

ANSWER: Ten **Lost Tribes** of Israel [prompt on **Tribes** of Israel]

[10] A sizable part of this community traces its descent from the lost tribe of Dan, rather than the Queen of Sheba. The key scripture in this community, the Orit, is written in the Ge'ez language.

ANSWER: **Beta Israel** [or **Ethiopian Jews**; or **Falashas**; or **Yehudey Etyopyah**]

[10] The namesakes of the ten lost and two not-lost tribes were the sons of this man, who had children with his wives Leah and Rachel, and their handmaidens Zilpah and Bilhah. He earned the name "Israel" after wrestling with God.

ANSWER: **Jacob** [or **Yaakov**] <Gupta>

8. In a novel by this author, Laurent is bitten on the neck while drowning the title character's husband in the Seine. For 10 points each:

[10] Name this French author who included *Therese Raquin* in his Rougon-Macquart cycle. He also denounced the anti-Semitism of the Dreyfus Affair in his letter *J'accuse*.

ANSWER: Emile Zola [or Émile Édouard Charles Antoine Zola]

[10] In this Zola novel, Etienne Lantier becomes a socialist after Maheu gets him a job in a coal mine and later leads a miners' strike that is derailed by the anarchist Souvarine.

ANSWER: Germinal

[10] This character from the Rougon-Macquart cycle is a courtesan and actress who rises to fame for her role in *The Blonde Venus*, but eventually dies of smallpox.

ANSWER: Nana Coupeau [accept either underlined portion] <Brownstein>

9. The exponential in its equation is equal to this law's namesake constant times the speed of light, times beta, over wavelength. For 10 points each:

[10] Name this law, which proposes that the amount of energy radiated is maximized at a single wavelength, unlike classical predictions, which suggested the intensity diverged as wavelength decreases.

ANSWER: Planck's law of blackbody radiation [or Planck's radiation law]

[10] According to Wien's Law, the wavelength of maximum intensity times this quantity is a constant. As a result, this quantity is a good indicator of the color any radiative emitter, such as a star, or a flame.

ANSWER: absolute temperature [or T]

[10] Integrated over all wavelengths, the total intensity radiated from a non-ideal absorber is proportional to temperature to the fourth times this other quantity, which is between 0 and 1 for so-called "gray" bodies.

ANSWER: emissivity [or epsilon] <Silverman>

10. Roger de Breteuil and two other men of this rank staged a namesake revolt against William I in 1075. For 10 points each:

[10] Identify this rank of British nobility. This rank was held by Warwick the Kingmaker during the War of the Roses.

ANSWER: earls [or jarls]

[10] Earls traditionally were the commanders of a regional army called a fyrd. Fyrds were organized by this "great" king of Wessex who won the Battle of Edington in 878.

ANSWER: Alfred the Great

[10] This king rewarded his supporters by creating nine earldoms in three years during the Anarchy, his conflict with Empress Matilda.

ANSWER: Stephen I [or Stephen of Blois] <Bentley>

11. This composer set Edith Sitwell's nonsensical poetry to music in the piece *Facades*. For 10 points each:

[10] Name this English composer who set selections from the Book of Daniel in his oratorio *Belshazzar's Feast*.

ANSWER: William Walton [or William Turner Walton]

[10] Though *Belshazzar's Feast* includes parts for two choruses, it features only one soloist, who possesses this male voice that sits between a bass and a tenor. Dietrich Fischer-Dieskau had this vocal range.

ANSWER: baritone [do not accept "bass-baritone"]

[10] A baritone soloist declares "I am the abbot of Cockaigne" in the "In Taberna" section of this secular cantata that sets medieval poetry in Latin and Middle High German about love and wine.

ANSWER: Carmina Burana [or Songs of Beuren; do not accept "O Fortuna"] <Kim>

12. They were first introduced by William Rowan Hamilton and they are sometimes represented using a 2 by 2 matrix. For 10 points each:

[10] Name this extension of the complex numbers which often uses i, j, and k, as components of its values.

ANSWER: **quaternions**

[10] Since you get a different result when you multiply quaternion A and quaternion B than if you multiplied quaternion B with quaternion A, the multiplication operator over the quaternions does not have this property.

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

[10] After figuring out the defining multiplication relations of the quaternions, Hamilton was so excited he performed what action on a nearby landmark?

ANSWER: he carved the formulas into Broom/Brougham **bridge** [accept any answer that accurately describes what he did and mentions a bridge] <Jose>

13. In the town of Saint Raphael, this man's troops allegedly massacred Spanish forces that were exiting church following a mass. For 10 points each:

[10] Name this military leader. After this man died a prisoner in France in 1803, his deputy and eventual successor Jean-Jacques Dessalines enforced a policy of militarized agriculture which forced former slaves to go back to their plantations.

ANSWER: Toussaint **L'Ouverture** [or **Toussaint** L'Ouverture]

[10] Toussaint L'Ouverture's incredibly bloody rebellion helped create this modern-day country by overthrowing the slave plantation regime known as Saint-Domingue. A 2010 earthquake devastated this Caribbean nation.

ANSWER: Republic of **Haiti**

[10] Napoleon's brother-in-law, Charles Leclerc, died in this manner after he was sent to reconquer Saint-Domingue. This fate also befell Leclerc's successor, General Rochambeau, and perhaps 50,000 other French troops.

ANSWER: he died of **yellow fever** [prompt on dying of **illness** or dying of **disease**] <Bentley>

14. This story begins with Amasa Delano, captain of the *Bachelor's Delight*, watching the approach of a vessel on which a tarpaulin fails to cover the words "Seguid vuestro jefe", or "follow your leader", on its figurehead. For 10 points each:

[10] Name this novella in which Delano eventually learns that Babo has led a slave insurrection on the *San Dominick*, overthrowing its former captain, the title Spanish sailor.

ANSWER: **Benito Cereno**

[10] This author included *Benito Cereno* alongside stories like "Bartleby, the Scrivener" in his collection *The Piazza Tales*. He also wrote *Moby-Dick*.

ANSWER: Herman **Melville**

[10] This other author included an adaptation of *Benito Cereno*, as well as versions of two Hawthorne stories, in his play *The Old Glory*. The poem "Waking in the Blue" appears in his groundbreaking collection *Life Studies*.

ANSWER: **Robert Lowell** [prompt on **Lowell**] <Weiser>

15. At this institution, Peter the Venerable presided over the first-ever translation into Latin of the Qur'an. For 10 points each:

[10] Name this institution, founded by William I, Duke of Aquitaine. It lends its name to a series of "reforms" promulgated by Odo, emphasizing art, a mendicant life, and charity towards the poor.

ANSWER: **Cluny Abbey** [or **Clugny**]

[10] Cluny was perhaps *the* foremost example of these institutions consisting of cloisters, libraries, and living quarters for monks. These places played a crucial role in preserving the classics and promoting learning during the Middle Ages.

ANSWER: **monasteries** [or **monastery**; or **priories**; or **friaries**; or **convents**]

[10] The Abbey of Cluny adhered very strictly to the "rule" developed by this sixth century CE saint from Nursia, who informed the Ostrogothic king Totila that his sword-bearer was an impostor.

ANSWER: Saint **Benedict** [or **Benedict** of Nursia] <Gupta>

16. One of these devices is often drawn over agar plates to sterilize them before bacteria are cultured. For 10 points each:

[10] Name these devices which provide a convenient open flame. Flame tests are often done by passing metals over these burners, which are named for a German chemist.

ANSWER: **Bunsen** burners

[10] Further sterilization of liquid media is often done in one of these devices, which use steam at high pressure and temperature. They can also be used to clean glassware.

ANSWER: **autoclaves**

[10] You can also use this type of filtration to remove particulates from a liquid. This process usually uses a Büchner funnel and a special thick-walled flask which tolerates low pressures.

ANSWER: **vacuum** filtration [or **suction** filtration] <Silverman>

17. During the entreaty to Achilles, Phoenix recounts how this hero refused to go into battle against the Curetes until their siege had approached his bedroom. For 10 points each:

[10] Name this Greek hero who dies when his mother burns a branch that she had kept hidden in a chest his entire life.

ANSWER: **Meleager**

[10] Meleager awarded the hide of the Calydonian Boar to this woman, a huntress who was the first to injure the beast. She lost a footrace to her eventual husband Hippomenes because he distracted her with three golden apples.

ANSWER: **Atalanta**

[10] This river god tries to marry Meleager's sister Deianira by wrestling with Heracles, but he has his horn broken off and turned into the cornucopia.

ANSWER: **Achelous** <Kim>

18. Adam Szubin heads the OFAC, a Washington agency responsible for enforcing this type of legislation. For 10 points each:

[10] Identify this type of legislation, which has been imposed on Iran in response to that country's nuclear program. These bills make it harder for Iranian businesses to receive loans from foreign banks.

ANSWER: economic **sanctions** [or trade **sanctions**]

[10] This senator appointed by Jon Corzine co-sponsored a bill with Mark Kirk which strengthened sanctions against Iran. He was indicted on corruption charges for shady dealings with campaign contributor Salomon Melgen.

ANSWER: Bob **Menendez** [or Robert **Menendez**]

[10] This junior senator from Ohio worked with Kirk on an amendment strengthening the Kirk-Menendez sanctions bill even further in March 2015, helping it to be unanimously approved.

ANSWER: Sherrod **Brown** [or Sherrod Campbell **Brown**] <Bentley>

19. In the introduction to this book, its author notes that he turned 18 in the year the Berlin Wall fell to distance himself from "lazy anti-capitalist rhetoric." For 10 points each:

[10] Name this Thomas Piketty book that uses data going back to the 1700s to verify the economic equation " r is greater than g ". It warns that a return to "patrimonial capitalism" might be coming soon.

ANSWER: ***Capital in the 21st Century*** [or *Le Capital au vingt-y-unième siècle*]

[10] Piketty's *Capital in the 21st Century* warns that this economic phenomenon, the differences in wealth or income between segments of the population, is increasing greatly worldwide.

ANSWER: wealth **inequality** [or income **inequality**]

[10] Piketty's " r is greater than g " equation implies that the rate of returns on financial assets is usually greater than the rate of this other quantity for a national economy. An "exogenous" model of it was devised by Robert Solow.

ANSWER: economic **growth** [accept answers such as **GDP growth** but do not accept "GDP"] <Jackson>

20. The title character has to dictate part of the twenty-second section of this book to his secretary Toadpipe after the idea of another character marrying a witty Christian girl angers him so much he turns into a centipede. For 10 points each:

[10] Name this epistolary novel in which the title character provides guidance in his nephew Wormwood's attempts to tempt a man away from God.

ANSWER: *The **Screwtape Letters***

[10] *The Screwtape Letters* was written by this member of the Inklings, whose other works of Christian apologetics include *Mere Christianity* and the allegorical *Chronicles of Narnia*.

ANSWER: C. S. **Lewis** [or Clive Staples **Lewis**]

[10] Elwin Ransom is abducted by Dr. Weston and Dick Devine and taken to Malacandra, where he meets the hrossa, the sorns, and the pfifltriggi (**FIF-ull-TRIG-ee**), in this first book of C. S. Lewis's *Space Trilogy*.

ANSWER: ***Out of the Silent Planet*** <Kothari>

21. Answer the following about women in Victorian Britain, for 10 points each.

[10] Upper-class British women wore this constricting garment, typically made of metal or whalebone, to mold their torsos into an hourglass shape.

ANSWER: **corsets**

[10] Unmarried middle-class women in England often found themselves in this lonely profession training children in well-off households. Marriage was typically seen as the only way out of this profession.

ANSWER: **governess**

[10] Women working in this specific occupation were the lowest on the hierarchy of female domestic servants, and worked in the namesake combination laundry and dishwashing rooms. These women served as assistants to kitchen maids.

ANSWER: **scullery** maids <Bentley>

22. This character calls Gooper's kids "no-neck monsters" at the beginning of the play in which she appears. For 10 points each:

[10] Name this character who drives Skipper to suicide after attempting to seduce him. She withholds alcohol from her husband Brick in an attempt to get him to sleep with her.

ANSWER: **Maggie** Pollitt [or **M**argaret Pollitt, prompt on Mrs. **Pollitt**]

[10] Maggie, Brick, and Big Daddy appear in this 1955 play centering on the machinations of the Pollitt family by Tennessee Williams.

ANSWER: ***Cat on a Hot Tin Roof***

[10] Brick uses this concept to justify his alcoholism, claiming that it is "a system that we live in" from which the only escapes are liquor and death. Big Daddy later tells Brick that his disgust with this concept is actually disgust with himself in a conversation about "passing the buck."

ANSWER: "**mendacity**" <Cheng>

23. Intoxicating quantities of ethanol are produced in the gut by these organisms in people suffering from auto-brewery syndrome. For 10 points each:

[10] Name this group of fungal organisms that includes the carbohydrate-fermenting *Saccharomyces cerevisiae*, which is important in alcohol production and baking.

ANSWER: **yeasts**

[10] Haploid *S. cerevisiae* exist as either the "a" mating type, or a type represented with this Greek letter. This letter prefixes a common, winding secondary structure in proteins.

ANSWER: **alpha** [or **alpha** cells; or **alpha** factor; or **alpha** helices]

[10] The Ste fungal pheromone mating factor receptors of "a" and alpha cells constitute a class of this large family of receptors composed of seven transmembrane alpha helices. They activate a namesake heterotrimeric protein, exchanging its bound GDP for GTP.

ANSWER: **GPCR**s [or **G protein-coupled receptors**; or **G protein-linked receptors**; or **GPLR**s; prompt on **seven-transmembrane** domain receptors; prompt on **7TM** receptors; prompt on **heptahelical** receptors; prompt on **serpentine** receptors; do not accept or prompt on "G proteins"] <Smart>