

# 2015 NSC - Official Scoresheet

Round	18	Room	
Bracket			
Reader			

Team									Team								
Player Names																	
Q#					Bonus	Steals	Ques. Total	Run. Score					Bonus	Steals	Ques. Total	Run. score	
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Player 20s																	
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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 18 - Tossups

1. Goods produced by this ethnic group were carried by the ship *United Kalavryta*, which was stuck in legal limbo for six months off the coast of Texas in 2014. Photographer Jacob Russell captured many images of female fighters of this ethnic group within a force whose name means "one who faces death." These people, who made up a plurality of the short lived Mahabad Republic after World War II, have yet to carry out a (\*) self-rule referendum proposed by Masoud Barzani. Soldiers from this ethnic group's *peshmerga* force helped defend the city of Kobani against an ISIS siege. In Halabja, thousands of people of this ethnic group were killed in a gas attack orchestrated by Saddam Hussein. For 10 points, name this ethnic group concentrated in Turkey and Northern Iraq.

ANSWER: Kurds [or Iraqi Kurds; do not prompt on just "Iraqis"] <Bentley>

2. This quantity multiplies residence time in the Damköhler number, and is divided by the diffusivity in the Thiele modulus. The exponential of one-half, times the square root of eight times Boltzmann's constant over pi, appears in a classical derivation for this quantity. The kinetic isotope effect is a ratio of these quantities. This quantity has units of molarity to the one minus n, over seconds, where n is the (\*) order. The natural logarithm of two, divided by this quantity, equals the half-life. According to collision theory, this quantity equals a pre-exponential factor times e to the negative activation energy, over RT, by the Arrhenius equation. For 10 points, name this constant which measures how quickly a reaction occurs.

ANSWER: reaction rate constant [prompt on reaction rate; prompt on k] <Silverman>

3. An instructor peers over the shoulder of a woman in the center of a Samuel Morse painting set in one of these places. The light and temperature of one of these places varied as part of Olafur Eliasson's *The Weather Project*. A man symbolically puts Louis XIV to rest by packing up a crate in one of these places in the painting *Gersaint's Shop Sign* by Jean-Antoine Watteau. One of these places was filled with millions of porcelain sunflower seeds by Ai Weiwei ("eye" way-way) and is called (\*) Turbine Hall. One in Washington, DC is split between a neoclassical west building and an east building designed by I. M. Pei, who also designed a glass pyramid that is outside of one of these places in Paris. For 10 points, name these locations that include the Tate Modern and the Louvre.

ANSWER: art gallery [or salon or art museum, or art store before "shop" is mentioned; prompt on museum; prompt on hall or Turbine hall until mentioned] <Bentley>

4. In spaces described by this adjective, disjoint closed sets have disjoint open neighborhoods. Subgroups of this type are invariant under conjugation. Numbers of this type have uniformly distributed digits in every base. If a multi-dimensional surface is the level curve of a well-behaved function, then the gradient of the function is parallel to a vector of this type. A set of mutually (\*) perpendicular vectors with unit length is called ortho-[this word]. The average of many independent random variables will approach a distribution named after this adjective, according to the central limit theorem. In that distributions, 68% of data falls within one standard deviation of the mean. For 10 points, identify this adjective which names the Gaussian bell-curve distribution.

ANSWER: normal [prompt on perpendicular or bell] <Schindler>

5. According to one thinker, this pair of concepts took on their present meaning after a process of *ressentiment* took hold among people akin to weak lambs being preyed upon by eagles. That same philosopher attributed the rise of this conceptual dichotomy to "three Jews," namely Jesus, Peter, and Paul. These concepts partly title a book which lauds the "free spirit" and opens by comparing past philosophers to inept seducers, asking "Suppose Truth is a (\*) woman -- what then?" According to *The Genealogy of Morals*, the "slave morality" based itself around these two concepts after it removed master morality's concept of "the bad." For 10 points, name these two opposing moral concepts which Friedrich Nietzsche sought to move *Beyond* in an 1886 book.

ANSWER: good and evil [or Gut und Böse; prompt on morals or slave morality until "title"; do NOT accept answers including "bad" or "not good"; do NOT accept answers including "right" and "wrong"] <Jackson>

6. A dramatic cantata by this composer based on *Jerusalem Delivered* is often cited as the first use of tremolo and pizzicato in orchestral music. That piece appears in a series' eighth book, which is divided into songs of love and songs of war. Together with his brother Giulio Cesare, this composer advocated a new style in which words governed the music, a style he referred to as the (\*) *seconda pratica*. He wrote a total of nine books of madrigals, and his last opera chronicles how the mistress of Nerone becomes Empress of Rome. For 10 points, name this Italian composer who is generally considered to mark the beginning of the Baroque era, and who wrote the operas *The Coronation of Poppea* and *L'Orfeo*.

ANSWER: Claudio Monteverdi <Rosenberg>

7. After hearing that a man is crying, a character in this play replies: "Then he's living." A character in this play tells a story about an Englishman frustrated that it took God only six days to create the world, when his tailor needs three months to make a pair of trousers. Another character in this play bestows the nickname "Old stancher" upon the large, bloodstained handkerchief covering his face. An (\*) elderly couple who lost their legs in a biking accident in the Ardennes and live inside trash cans, named Nagg and Nell, torment their wheelchair-bound son and his always-standing servant in this play. For 10 points, name this one-act play about Hamm and Clov with a chess-inspired title, written by Samuel Beckett.

ANSWER: Endgame [or Fin de partie] <Gupta>

8. Two participants in this event converted to Christianity after getting Matthew Quintal drunk and murdering him with a hatchet. A participant in this event named his son "Thursday October" because he sought "no name that will remind me of England." This event took place after a five-month layover during a breadfruit gathering expedition, and it forced a man to cover four thousand miles in an open (\*) boat to reach safety. The HMS *Pandora* was sent to arrest the participants in this event, but ran aground on the Great Barrier Reef afterwards. Fletcher Christian led this revolt, many of whose participants ended up in Tahiti or Pitcairn Island. For 10 points, name this 1789 insurrection on a ship captained by William Bligh in the south Pacific.

ANSWER: mutiny on the Bounty [or Bounty rebellion; accept any answers indicating that this is an uprising on the HMS Bounty; accept HMS Bounty after "insurrection" is read] <Gupta>

9. An event named for these objects was instigated by the secret Council of Sixteen and resulted in the issuance of the Edict of Union. Jaroslaw Dabrowski (YA-row-slav da-BROV-ski) died on one of these objects during the "Bloody Week." Many of them were built following the end of the "banquets campaign." The Mobile Guard destroyed many of these structures erected after the closing of the National Workshops. Henry, Duke of Guise, seized power on the so-called (\*) "Day" of these structures. Victor Hugo's experience traversing these structures inspired the battle scenes in *Les Misérables*. These structures were used to block troops during events like the June Days and the February Revolution. For 10 points, name these makeshift fortifications that were often built during Parisian revolutions.

ANSWER: barricades [or barrier; or blockade; or roadblock] <Brownstein>

10. An author with this surname penned a line beginning "All true histories contain instruction", which opens a novel in which the flirty Rosalie regrets marrying Lord Ashby. That author created a character who helps Nancy Brown read the Bible, during which she meets her future husband Edward Weston, and works as a governess for the Bloomfield and Murray families. Another author with this surname wrote a novel that includes the dogs Fanny, who is hanged during the elopement of its owner Isabella, and (\*) Skulker, who bites a girl at Thrushcross Grange. Nelly Dean tells Mr. Lockwood the history of the Earnshaw family and its adopted member Heathcliff in a novel by that author. For 10 points, give the surname shared by the authors of *Agnes Grey* and *Wuthering Heights*.

ANSWER: Brontë [or Anne Brontë; or Emily Brontë; prompt on (Acton or Ellis) Bell] <Carson>

11. A ring of this organ's tissue constricts a nearby structure in a rare "annular" condition. A form of amyloidosis known as IAPP is frequently seen in diseased forms of this organ. The Golgi apparatus of many cells in this organ contain C-peptide, which converts a protein made here to its active form. The centroacinar cells and intercalated ducts in this organ respond to the hormone secretin, enabling this structure to release bicarbonate. This organ's duct joins the common (\*) bile duct just prior to the Ampulla of Vater. Like the salivary glands, this organ makes amylase. Cells in this organ are destroyed in type 1 diabetes. For 10 points, name this digestive organ whose beta cells in the islets of Langerhans produce insulin.

ANSWER: pancreas <Gupta>

12. In this film, a housekeeper named Anna notices the protagonist sneaking around upstairs by seeing his reflection in the glare of a TV screen. At its climax, the shot transitions from the male lead pulling up his love interest from the edge of a cliff to him helping her onto a bed in a Pullman car. Early in this film, the hero liquored up at the house of UN diplomat Lester Townsend. The protagonist gets out of a jam by punching a man and getting arrested at an auction also attended by (\*) Phillip Vandamm and his lover, played by Eva Marie Saint. In one iconic scene, the protagonist, an oft-divorced ad exec played by Cary Grant, is almost run-down by a crop duster. For 10 points, name this Alfred Hitchcock film which ends with a descent of Mount Rushmore.

ANSWER: North by Northwest <Bentley>

13. Members of the "crocodile," or "Akali," order historically created elaborate "fortress" types of these objects. On the thirteenth day after the death of the eldest male in a family, one of these objects is transferred to the next oldest male family member. These items are exchanged between friends in the *vatvani* ceremony. People who don't own these objects must instead use a *rumal* before they can enter a (\*) *gurdwara*. The *kangha* is typically tied underneath these objects, which in Punjabi are called *dastaar* or *pagh*, and serve to conceal the *kes*. After being baptized into the *khalsa*, all men are required to wear these objects. For 10 points, name these distinctive pieces of headgear in Sikhism.

ANSWER: Sikh turbans [or pagh before mentioned; or dastaar before mentioned; or pagri before "pagh" is read] <Gupta>

14. Norwegian-born sculptor Oscar J.W. Hanson designed a memorial commemorating 112 worker deaths during this project, many from carbon monoxide poisoning in four horrifyingly-hot diversion tunnels. Harold Ickes (ICK-uhs) lambasted the eventual namesake of this project for "tak[ing] credit for something he had nothing to do with." The Six Companies, Inc. joint venture was founded to oversee this project, superintended by chief engineer Frank Crowe. The Bureau of (\*) Reclamation received its first mass funding to carry out this project, which built four reinforced concrete intake towers feeding steel penstocks. This project was named at the time of its completion for Boulder Canyon, and it impounded Lake Mead. For 10 points, name this dam on the border between Arizona and Nevada.

ANSWER: the construction of Hoover Dam [accept the construction of Boulder Dam before "Boulder Dam" is mentioned; accept the Boulder Canyon project before "Boulder Dam" is mentioned] <Gupta>

15. In the *Metamorphoses*, the rape of Persephone is retold during a narration of one of these events. In the aftermath of this type of event, the daughters of Pierus are transformed into magpies. An instance of this event is arbitrated by the mountain god Tmolus. A participant in one of these events uses a cursed object that Athena previously threw away because it ruined her beauty, but is defeated when that object, an *aulos*, cannot be used upside-down. For his poor (\*) judgment of one of these competitions, donkey ears are given to Midas. After his defeat at this activity, Marsyas is flayed alive by Apollo. For 10 points, identify this type of competition which Pan participated in with his pipes, and Apollo with his lyre.

ANSWER: music contest [or singing contest; or contests of the voice, flute, pipes, or lyre; or obvious equivalents; prompt on contests; prompt on competitions] <Kim>

16. Near the end of this novel, the protagonist makes a papal sign of the cross while overlooking a beach. A woman in this novel intentionally causes her husband to drive their car off the road, then proceeds to laugh maniacally as he checks on the children. After punching several Italian taxi drivers, the protagonist of this novel is bailed out of jail by Baby, whose sister later seduces the war hero Tommy Barban. In this novel, the young star of the film *Daddy's Girl*, (\*) Rosemary Hoyt, loses her virginity to a psychiatrist who married one of his schizophrenic patients. The tumultuous relationship of this novel's central couple was based on that of the author and his wife Zelda. For 10 points, name this novel about Nicole and Dick Diver, by F. Scott Fitzgerald.

ANSWER: *Tender is the Night* <Sy>

17. A study by Jonathan Haidt found that people who fit this descriptor worldwide express concern about only two or three "moral foundations," whereas most people respond to five or six. An essay critiquing the Kinsey report appears in an essay collection titled for the *Imagination* of this sort of person by literary critic Lionel Trilling. Libertarians often (\*) sympathize with one type of these people, whose economic views were often laissez-faire. Paul Krugman self-identified as one of these people in a book and blog that invert a Barry Goldwater title to discuss the *Conscience* of this type of person. For 10 points, name this political adjective for left-of-center people in favor of freedom and equality, who often oppose conservatives.

ANSWER: liberal [or word forms such as liberalism; accept descriptive answers such as left-of-center until "*Imagination*"] <Jackson>

18. In the original solution of a first-order equation comprised of three alpha matrices and a beta matrix, this particle's wavefunction has a positive imaginary exponential. In a famous photograph, one of these particles travels through a lead plate and loses its radius of curvature as it travels upward. Fluorodeoxyglucose is a source of these particles. Pauli and Weisskopf explained how this particle gives a (\*) negative energy density in the Klein-Gordon equation. When a photon of energy greater than 1.02 MeV undergoes pair production, an electron and this particle are formed. The Dirac equation predicted this particle as a "hole" in a sea of electrons. For 10 points, name this particle symbolized  $e^+$ , which is the antiparticle of the electron.

ANSWER: positron [or antielectron] <Silverman>

19. One woman in this short story claims "you never cross O'Connell Bridge without seeing a white horse." Its protagonist gives the maid Lily some money after he embarrassingly mentions her marriage prospects, and later imagines a painting of his wife titled "Distant Music." This story's protagonist is called a "West Briton" by Molly Ivors for his refusal to vacation in the Aran Islands. This short story contains a performance of "The Lass of Aughrim" by tenor (\*) Bartell D'Arcy at a dinner party thrown by the Morkan sisters. The protagonist's wife Gretta reveals her childhood love affair with a man who died waiting outside her window in the rain, Michael Furey. Gabriel Conroy has an emotional crisis in, for 10 points, what final short story from James Joyce's *Dubliners*?

ANSWER: "The Dead" <Weiser>

20. Some examples of this city's pottery was created by an artist known as Ninsei. Rulers from this city would abdicate and retire to a monastery in the system of "cloistered rule." Two rival factions camped inside of this city in a 15th century civil war that kicked off the Warring States Period and left it mostly leveled. Five centuries later, it was spared from destruction in part because Henry Stimson had visited it on his honeymoon. A 1997 (\*) treaty named for this city did not require developing nations such as China to restrict their greenhouse gas emissions. The temple of Kinkaku-ji was destroyed and then rebuilt following a 1950 arson in this city, whose fortunes declined after the Tokugawa Shogunate moved to Edo. For 10 points, name this former capital of Japan.

ANSWER: Kyoto, Japan <Bentley>

21. A poem by this author describes a group which does not care if the "moon rattles like a fragment of angry candy." In a poem by this author, "an host of overjoyed noncoms" make use of "brushes recently employed" in a "muddy toiletbowl." This poet wrote of people who "believe in Christ and Longfellow, both dead" in "the Cambridge ladies who live in furnished souls." In another poem, he described a man who was "more brave than me: more (\*) blond than you" and "whose warmest heart recoiled at war." Several variants on the line "sun moon stars rain" appear in a poem by this man about a person who marries "noone" in a place with "up so floating many bells down." For 10 points, name this American poet of "I sing of olaf glad and big" and "anyone lived in a pretty how town."

ANSWER: E. E. Cummings [or Edward Estlin Cummings] <Brownstein>

22. A zinc atom binds to the H1 helix and L3 loop of this protein, whose oligomerization domain allows it to form a tetramer and interact with DNA. The E6 and E7 proteins encoded by HPV respectively degrade this protein and the very similar Rb. As a transcription factor, this protein upregulates the expression of Bax and PUMA, members of the Bcl-2 gene family. The serine/threonine kinase (\*) ATM phosphorylates this protein to prevent it from being polyubiquitinated and degraded by Mdm2. This protein, which is essential for cell-cycle arrest at the G1 checkpoint, is mutated or deleted in over half of all human tumors. For 10 points, name this tumor suppressor gene known as the "guardian angel of the genome."

ANSWER: tumor protein p53 [or cellular tumor antigen p53; or phosphoprotein p53; or tumor suppressor p53; or antigen NY-CO-13; or transformation-related protein 53; or TRP53] <Gupta>

23. Oscar V. Peterson suffered third-degree burns in the process of closing several steam-line valves during this battle, for which he won a posthumous Medal of Honor. This battle thwarted Operation Mo, which was later reattempted later the same year by an advance through the Kokoda Track. Just prior to this battle, one side had engaged in a successful invasion of Tulagi. The (\*) *Shobo* was sunk and the *Lexington* was critically damaged in this battle, which prevented the Japanese from invading Port Moresby. This battle marked the first time in naval history that ships did not directly engage each other, instead launching aircraft from carriers. For 10 points, name this 1942 naval battle fought to the northeast of the Australian coast.

ANSWER: Battle of the Coral Sea <Huang>

24. This character questions the opinion that genitals are only used to expel urine and to distinguish between the sexes, referring to an individual's sexual ability as one's "belle chose." This character engages in the cloth trade at Ypres and Gaunt and refuses to perform the church offering unless she is the first one to offer. This character rips a page out of a book after hearing abuses against (\*) women read out loud from it, prompting her husband Jankyn to strike her. In a tale told by this character, a knight rapes a woman and, as part of a punishment devised by Guinevere, discovers that what women want is sovereignty. For 10 points, name this woman who has been married five times, a pilgrim in *The Canterbury Tales*.

ANSWER: the Wife of Bath [or Alisoun] <Sy>



### PACE NSC 2015 - Round 18 - Bonuses

1. The first chapter in this book features the Teacher saying "Meaningless! Meaningless! Everything is meaningless!" For 10 points each:

[10] Name this Biblical book in which the Teacher concludes that wisdom, pleasure, and riches are all in the end rather meaningless. It describes "a time for everything," such as a "time to be born and a time to die."

ANSWER: Ecclesiastes [or Qoheleth; prompt on Book of the Teacher]

[10] Authorship of Ecclesiastes is traditionally ascribed to this biblical king, who is also credited with writing the Song of Songs and many of the aphorisms in the book of Proverbs.

ANSWER: Solomon

[10] The 25th chapter of Proverbs is said to be "copied by the men of" this good king of Judah. He ruled Judah during the siege of Jerusalem by the Assyrian Sennacherib and was himself the father of the wicked Manasseh.

ANSWER: Hezekiah <Cheyne>

2. Emperors drank this substance in crushed-up powder form in beverages in an attempt to gain immortality, and a thin disk made from this substance called a *bi* was sometimes given to noblemen. For 10 points each:

[10] Identify this type of precious stone, which was mined in the Tarim Basin and traded east to imperial China. A defined set of six ritual objects was made from this rock.

ANSWER: jade [or jadeite or nephrite]

[10] Some emperors of this Chinese dynasty, which lends its name to China's dominant ethnicity, were buried in full suits of jade armor. Wang Mang's usurpation of this dynasty overlaps in time with much of Emperor Augustus's reign in Rome.

ANSWER: Han dynasty

[10] The Han dynasty gave this name to enemy barbarians who lived along the northern border with China, who were the impetus for building the Great Wall. Emperor Wu Di of Han sent a huge failed expedition against these people, who later theories often link to the Huns with *no* credible evidence.

ANSWER: Xiongnu <Bentley>

3. This composer adapted Walt Whitman poems for his first symphony and his *Dona Nobis Pacem*. For 10 points each:

[10] Name this British composer who drew upon older English music for inspiration in pieces like his "Fantasia on a Theme of Thomas Tallis," and depicted a bird in flight in *The Lark Ascending*.

ANSWER: Ralph Vaughan Williams

[10] For his opera *Sir John in Love* Vaughan Williams also composed a fantasia on this English folk song.

Apocryphally written by Henry VIII, the traditional lyrics begin "Alas, my love, you do me wrong, to cast me off discourteously."

ANSWER: "Greensleeves" [or "What Child is This"]

[10] "Vaughan Williams' countryman Frederick Delius also depicted a bird in this tone poem which quotes the folk song "In Ola Valley."

ANSWER: *On Hearing the First Cuckoo in Spring* <Rosenberg>

4. While living amongst actual spies in the Isokon building in the Lawn Road Flats in North London, this author wrote a novel in which Tuppence and Tommy Beresford seek the two title German spies in the Sans Souci boarding house. For 10 points each:

[10] Name this author of the espionage novel *N or M?* She created the characters of Hercule Poirot and Miss Marple.

ANSWER: Agatha **Christie** [or Dame Agatha Mary Clarissa **Christie**; or Agatha **Miller**]

[10] This British author of spy fiction wrote *The Spy Who Came in From the Cold* and *Tinker Tailor Soldier Spy*.

ANSWER: John le **Carre** [or David John Moore **Cornwell**]

[10] This American author was a master of the hard-boiled detective story, writing such gems as *The Postman Always Rings Twice* and *Double Indemnity*.

ANSWER: James M. **Cain** [or James Mallahan **Cain**] <Bentley>

5. Answer the following about physical and chemical weathering, for 10 points each.

[10] The most common byproduct of chemical weathering of feldspars and micas is this group of minerals.

ANSWER: **clay** minerals

[10] The classic example of physical weathering is the "wedging" of rocks due to this phase transition in water.

ANSWER: **freezing** [or obvious equivalents; do not accept "melting"]

[10] This ion and calcium two plus are the result of calcite being chemically weathered by carbonic acid.

ANSWER: **bicarbonate** [or **HCO<sub>3</sub><sup>minus</sup>**] <Voight>

6. After this character's defeat, his enemy turns into a prince and heads to the Land of Snow. For 10 points each:

[10] Name this character whose troops appear to have the upper hand in a battle until this character is undone by a slipper to the head.

ANSWER: **Mouse King** [or **Rat King**]

[10] The Mouse King is a character in this Tchaikovsky ballet, in which Clara receives the title object from Drosselmeyer and dreams of heading to the Land of Sweets and meeting the Sugar Plum Fairy.

ANSWER: *The* **Nutcracker**

[10] Like *The Nutcracker*, this ballet was inspired by E.T.A. Hoffmann's work. This ballet, with music by Leo Delibes, features the "Waltz of the Hours," a doctor creating life-sized mechanical dolls, and the marriage of Franz and Swanilda.

ANSWER: **Coppelia** <Gehring>

7. Answer the following about Apollonius of Rhodes, for 10 points each.

[10] He engaged in a long-running feud with Callimachus sparked by a debate over the best way to execute this attribute of a poem. Callimachus attacked Apollonius's Homeric sympathies in this regard with the phrase "mega biblion, mega kakon".

ANSWER: the poem's **length** [or **size** or **shortness**; accept clear-knowledge equivalents]

[10] He is best known for writing this epic poem about Jason's quest to find the Golden Fleece.

ANSWER: the **Argonautica**

[10] Apollonius Rhodius also served as the head librarian of the famous library in this Egyptian city. The destruction of this city's library may have been ordered by Julius Caesar.

ANSWER: **Alexandria** <Jose>



8. One ethnography in this medium is John Marshall's *The Hunters*, which is about a giraffe hunt by four !Kung ([click]-koong) men. For 10 points each:

[10] Name this medium that was also used for Robert J. Flaherty's Inuit salvage ethnography project, *Nanook of the North*.

ANSWER: film [or cinema; or movies; or documentary]

[10] This woman helped pioneer ethnographic film and created the photographic project *Balinese Character* with her third husband Gregory Bateson. She also wrote *Coming of Age in Samoa*.

ANSWER: Margaret Mead

[10] Several of Mead and Bateson's ethnographic films are from this island, three of whose tribes Mead described in *Sex and Temperament in Three Primitive Societies*. This large Melanesian island has some of the highest linguistic diversity in the world.

ANSWER: New Guinea [accept Papua New Guinea] <Kothari>

9. The spiritual elite of this movement, known as the *perfecti*, abstaining from eating any organism that arose from sexual reproduction. For 10 points each:

[10] "Name this heretical dualist sect that flourished in southern France until its members were targeted by an early 13th century "crusade."

ANSWER: Catharism [or Albigensianism; accept word forms]

[10] In response to the Cathars and the Waldensians, the Catholic Church set up the first of these institutions charged with suppressing heresy. The later "Spanish" one administered by Tomas de Torquemada was renowned for its cruelty.

ANSWER: inquisitions

[10] This warlord was elected leader of the Albigensian Crusade after the fall of Carcassonne, and routinely gouged out the eyes of his prisoners. His son of the same name led the barons in revolt against Henry III of England.

ANSWER: Simon de Montfort [or Simon de Montfort, 5th Earl of Leicester; or Simon de Montfort, 6th Earl of Leicester] <Bentley>

10. The Needleman-Wunsch algorithm is a dynamic programming algorithm for the pairwise version of this task, and Clustal is a software package for this task. For 10 points each:

[10] Name this task that identifies regions of similarity among proteins or nucleic acids. The BLAST algorithm uses this kind of procedure to search gene databases.

ANSWER: sequence alignment [accept answers like aligning sequences; prompt on string matching]

[10] Sequence alignments for proteins often use substitution matrices like PAM matrices or BLOSUM62, which track the rates of change in these building blocks of proteins.

ANSWER: amino acids

[10] The combinatorial extension method in sequence alignment takes this property of amino acids into account. The centers of proteins are packed with residues that have this property, as do the tails of molecules that aggregate to form a micelle.

ANSWER: hydrophobicity [or word forms; or lipophilicity; prompt on nonpolarity] <Kothari>

11. In an oft-anthologized story by this author, Sylvia prevents a hunter from shooting the title bird while out tracking down Mistress Moolly, her family's cow. For 10 points each:

[10] Name this American author of "The White Heron" who became an early proponent of local-color regionalism with a collection of short stories set in the Maine fishing village of Dunnet Landing titled *The Country of the Pointed Firs*.

ANSWER: Sarah Orne Jewett

[10] Jewett's stories were heavily influenced by local color novels like *The Pearl of Orr's Island* by this woman, who was a fellow resident of Maine from 1853 onward. She is best known for writing *Uncle Tom's Cabin*.

ANSWER: Harriet Beecher Stowe [or Harriet Elisabeth Beecher Stowe]

[10] In a scene from *Uncle Tom's Cabin* included in numerous stage and film adaptations of the book, this character leaps across ice on the frozen Ohio River to reach her freedom. She is the wife of George Harris.

ANSWER: Eliza Harris <Bentley>

12. The first U.S. venue using this arrangement was the Glenn Hughes Penthouse Theater on the University of Washington's campus, and Margo Jones further developed this configuration with her Theater '47 company. For 10 points each:

[10] Name this stage design developed in the 20th century, in which actors enter or exit through gaps in audience seating, and actors always have their back turned to at least some of the audience.

ANSWER: theatre-**in-the-round** [or **arena** theatre; or **arena** staging; or **central staging**]

[10] Theater in the round forsakes this theater feature, the area in front of the curtain which frames the actors and scenery. It is sometimes accompanied by a namesake "arch" around the stage.

ANSWER: **proscenium**

[10] The classic proscenium design helps reinforce this theater studies concept, an imaginary barrier which prevents performers from noticing the viewing audience. Characters may "break" this construct by addressing the audience.

ANSWER: **fourth wall** [or breaking the **fourth wall**] <Smart>

13. This artist's pursuit of abstraction led him to banish all "memory, history or geometry" from his canvases. For 10 points each:

[10] Identify this artist whose Color Field paintings generally consisted of a soft-edged rectangle of one color above one or two other rectangles of different colors. One such painting by this artist is *Slate Blue and Brown on Plum*.

ANSWER: Mark **Rothko** [or Mark or Marcus **Rothkovitch** or **Rothkowitz**]

[10] In 2015, Christie's auctioned off Rothko's *No. 36*, which is nicknamed for a stripe of this color. This color describes a series of bleak paintings by Francisco Goya.

ANSWER: **black**

[10] Rothko created 14 large canvases for a namesake chapel in this US state. Renzo Piano designed the Cy Twombly Pavilion for the Menil Museum in this state.

ANSWER: **Texas** <Bentley>

14. Ascalaphus is transformed into an owl for divulging a deed committed by this deity, whose friends are transformed into the Sirens. For 10 points each:

[10] Name this youngest of the deities venerated by the Eleusinian Mysteries.

ANSWER: **Persephone** [or **Proserpina**]

[10] This Greek goddess of harvest allows the crops to wither away when she goes searching for her daughter Persephone, who has been abducted by Hades.

ANSWER: **Demeter** [or **Ceres**]

[10] This disciple of Demeter is taught the gift of agriculture. Later, Demeter protects him from the murderous Lyncus, whom she transforms into a lynx.

ANSWER: **Triptolemus** <Kim>

15. You're on a boat! Answer some questions about the physics going on around you, for 10 points each.

[10] When you want to figure out the speed and direction of the true wind, you can subtract your boat's velocity from the apparent wind's velocity since velocity is this kind of construct with both magnitude and direction.

ANSWER: **vectors**

[10] To determine the stability of your boat, you'd want to draw one of these diagrams that depict the relative magnitudes and directions of all the forces on an object.

ANSWER: **free body** diagram [or **FBD**]

[10] If you were on a space boat, you might be able to use solar sails as a low-propulsion method of navigating the Solar System. Solar sails are driven by this quantity, the force per unit area that electromagnetic waves exert on a surface.

ANSWER: **radiation pressure** <Nutter>

16. These two provinces were annexed by Austria-Hungary in 1908, despite that country having agreed to return them to the Ottoman Empire. For 10 points each:

[10] Identify these two provinces ruled as part of a "Condominium." These provinces were annexed at the same time that Bulgaria declared its independence.

ANSWER: **Bosnia** AND **Herzegovina**

[10] Two years after Austria-Hungary annexed Bosnia and Herzegovina, this man bragged that he had been Austria's "knight in shining armor" during the controversy. This German emperor abdicated following Germany's defeat in World War I.

ANSWER: **Wilhelm II** [or **William II** or **Frederick William Victor Albert**; prompt on **Wilhelm**; prompt on **William**]

[10] Austria-Hungary formally seized control of Bosnia and Herzegovina during the height of this movement, which was sparked by a revolt in the 3rd Army Corps by Ahmed Niyazi. As a result of this movement, Sultan Abdülhamid II reestablished the Constitution of 1876.

ANSWER: **Young Turk** Revolution [or **Young Turk** Movement or **Jonturkler**] <Bentley>

17. The most famous model for this icon was Michigander Geraldine Hoff Doyle. For 10 points each:

[10] Name this iconic factory worker who represented women's role in home-front production during World War II. In one depiction, she appears flexing her arm below the slogan "We Can Do It!"

ANSWER: **Rosie** the Riveter

[10] Rosie crushes a copy of *Mein Kampf* under her penny loafers in a cover Norman Rockwell designed for this bimonthly magazine, which also published Rockwell's illustrations of Roosevelt's Four Freedoms.

ANSWER: *The* **Saturday Evening Post**

[10] Many actual female riveters helped mass-produce low quality Liberty ships at seven West Coast shipyards owned by this industrialist, who launched his best-known initiative to provide health care for his workers.

ANSWER: Henry J. **Kaiser** [or Henry John **Kaiser**] <Wasserman>

18. Any process of this sort will require the least amount of input work and will produce the largest amount of output work. For 10 points each:

[10] Name this type of thermodynamic process in which steady state is reached at each infinitesimal time point. It is often visualized as removing sand grain-by-grain from an expanding piston.

ANSWER: **reversible** processes

[10] The law of microscopic reversibility states that no elementary reaction may produce more than this many products. This is the largest number of reactants that will collide with proper orientation in collision theory.

ANSWER: **two**

[10] If a reaction is reversible, then it's represented by double-headed arrows, since it will eventually reach this state. In this state, the rate of the forward reaction is the same as the reverse reaction.

ANSWER: chemical **equilibrium** <Silverman>

19. This collection includes a poem that ends with a six-line "Prayer" in which the speaker envisions his soul sitting with the title figure under the Tree of Knowledge as its branches spread like a temple. For 10 points each:

[10] Name this collection of poetry, whose "Spleen and Ideal" section is preceded by a denunciation of "Ennui" in the poem "To the Reader."

ANSWER: *The* **Flowers of Evil** [or *Les* **Fleurs du mal**]

[10] This French symbolist wrote *Les Fleurs du mal*.

ANSWER: Charles **Baudelaire** [or Charles Pierre **Baudelaire**]

[10] In this aforementioned poem from *Les Fleurs du mal*, the speaker follows every two-line stanza with a plea to the title figure to "take pity on my long misery."

ANSWER: "The **Litanies of Satan**" [or "Les **Litanies de Satan**"; or anything with **Satan** and either **Litany** or **Litanies**] <Kim>

20. This island's largest city, Odense, preserves the childhood home of Hans Christian Andersen. For 10 points each:

[10] Name this European island on the west side of a waterway called the Great Belt, south of the Skagerrak strait. A suspension bridge across the Great Belt links it to Zealand to its east.

ANSWER: **Funen** [or **Fyn**]

[10] Fyn lies east of Jutland in this Scandinavian nation.

ANSWER: **Denmark** [or **Danmark**]

[10] Denmark contains a district named for these features, where the S.S. *Hjeljen* has been in continuous operation near Silkeborg since 1861. Another district named for them overlaps with northwestern Patagonia in Argentina, and a third in northern England inspired poets such as Robert Southey.

ANSWER: **lakes** [or **Lake Districts**] <Jackson>

21. This character loses the remainder of his fortune when he is captured by Luigi Vampa's bandits and sold chicken and loaves of bread for 100,000 francs apiece. For 10 points each:

[10] Name this banker whose immense wealth is lost investing in stocks. His wife Hermine has an affair that produces Benedetto, a robber who later takes the alias Andrea Cavalcanti.

ANSWER: Baron **Danglars**

[10] Early in his career, Danglars's jealous accusations of Bonapartism send his colleague Edmond Dantès to a lifetime of imprisonment in this island prison home to the Abbé Faria.

ANSWER: **Château d'If**

[10] Edmond Dantès escapes from prison and takes on the title noble alter-ego in this novel by Alexandre Dumas.

ANSWER: *The* **Count of Monte Cristo** [or *Le* **Comte de Monte-Cristo**] <Kim>

22. Identify the following about variables in computer science, for 10 points each.

[10] Unlike floats, these types of variables generally do not store decimals. These signed variables are often stored using 32 bits and can contain more data than a byte or short but less than a long.

ANSWER: **ints** [or **integers**; or **Int32**; or **words**; or **doubleword**; or **longword**; or **halfword**]

[10] Variables should not be confused with these things, which have their value set at declaration and are immutable. E in Java's Math library is an example of one of these things.

ANSWER: **constants** [or **constant variables**; or **literals**; do not accept or prompt on "final"]

[10] If a variable is defined at the block level, this property of the variable is limited to the block, making it invisible to other blocks in a function. This property defines a variable's visibility to different parts of a program and comes in function and global varieties.

ANSWER: **scope** [or **visibility**] <Bentley>

23. Matrons called Mama Cuna supervised the Chosen Women, virgins who worshiped this entity. For 10 points each:

[10] Name this entity, for which a "hitching post" stone was built at Machu Picchu. The Incas worshiped this entity as Inti.

ANSWER: the **sun**

[10] The main temple to Inti, Qorikancha, was known as the house of this metal. The Ransom Room was filled with this precious metal and silver in an attempt to rescue Atahualpa from Pizarro.

ANSWER: **gold**

[10] This Inca emperor renovated the House of the Sun. This ninth Sapa also rebuilt Cusco in the shape of a puma and organized the empire into four suyus.

ANSWER: **Pachacuti** Inca Yupanqui [or **Pachacutec**; or **Pachakutiq** Inka Yupanki] <Brownstein>