



NASAT 2016  
Round 1

1. Besides his treatise on the *Divine Names*, the most notable work by Pseudo-Dionysius the Areopagite discusses these things. The phrase "Grigori" refers to some of these things that are heavily described in the apocryphal Books of Enoch. First Corinthians 11 argues that, specifically because of these things, women should wear head coverings when praying or prophesying. Tertullian suggested these things are what created the gigantic Nephilim. In the Talmud, Elisha ben Abuyah declares that there are "two powers in heaven" when he sees one of these things named Metatron. The book of Daniel mentions one of these beings by name, saying he will help fight the princes of Persia and protect Israel. For 10 points, name these celestial figures that include Gabriel and Michael.

ANSWER: angels [or archangels; or fallen angels; or Watchers; or mal'akhim; or Grigori until it is read] <Marvin>

2. In an aria by this composer, a solo trumpet imitates the melody sung by a bass soloist describing the raising of the dead during Judgment Day. He wrote an interlude for strings and two oboes that begins with busy B-flat major violin arpeggios. Another of his pieces includes a third-act "Dead March" that depicts the funeral procession of Saul. A dotted rhythm underlines the words "And all the people rejoiced" in a choral piece by this composer that ends with cries of "God save the King!". This composer of *Zadok the Priest* wrote arias such as "Ev'ry valley shall be exalted" and "For unto us a child is born" for his oratorio about Jesus Christ. For 10 points, name this composer of *Messiah*, which includes the "Hallelujah" chorus.

ANSWER: George Frideric Handel [or Georg Friedrich Handel] <Kim>

3. In a play by this author, an aging bachelor delivers a lengthy rant about the emptiness and despair that awaits a philandering tutor with whom his lost love has become involved. In an autobiographical short novel by this man, the narrator becomes infatuated with his neighbor, a girl who hits him on the head with flowers. In that novel of his, the narrator's father is the secret lover of Zinaida. A character created by this author of *First Love* duels with Pavel and dies after forgetting to cauterize a cut he suffers while treating a typhus patient. In his best-known novel, the medical student Arkady Kirsanov brings home his friend, the nihilist Bazarov. For 10 points, name this Russian author of *A Month in the Country* and *Fathers and Sons*.

ANSWER: Ivan Turgenev [or Ivan Sergeyevich Turgenev] <Sy>

4. Though not an e-beam, this phenomenon causes cross-linking in negative semiconductor resists, making it harder to remove. Commercially, devices that produce this phenomenon most commonly have their lifespan quoted in terms of L70 and use cerium-doped YAG. The development of devices that produce this thing earned Nichia Corporation's Shuji Nakamura the 2014 Nobel Prize in Physics. A popular remote sensing method that is a variation on radar is named for this thing. The chromaticity of a source of this thing is quantified by the CCT, or correlated color temperature, which is a measure of how close the source matches a blackbody locus. August Köhler, of Carl Zeiss, developed a new way to use sources of this thing in microscopy. For 10 points, name this phenomenon that is produced by spontaneous emission in LEDs.

ANSWER: light [or photons; or subtypes of light, such as UV light, white light, or blue light; prompt on electromagnetic waves] <Voight>

5. A "gas-and-water Socialist" with this surname proposed an "unauthorized programme" which promised every citizen "three acres and a cow" while serving as Mayor of Birmingham. Leo Amery gave a speech echoing Oliver Cromwell in which he told a man with this surname, "In the name of God, go!". That leader with this surname was told to "sacrifice the seals of office" during the "Norway Debate". This is the surname of Stanley Baldwin's foreign secretary, who with Charles Dawes won the 1925 Nobel Peace Prize for negotiating the Locarno Pact. A man with this surname presided over the "phony war" and proclaimed "peace for our time" after returning from Munich. For 10 points, give this surname of a pro-appeasement prime minister who preceded Winston Churchill.

ANSWER: Chamberlain [or Neville Chamberlain; or Joseph Chamberlain; or Austen Chamberlain] <Kendrick>

6. This economist claimed that a world reserve currency from a country whose central bank controls its inflation rates could act as an asymptotically ideal money, such as the euro. This economist's paper "The Bargaining Problem" highlighted the importance of anticipation in negotiations. He used the Brouwer fixed-point theorem, rather than the Kakutani theorem, to expand on the work of John von Neumann (NOY-mahn) and Oskar Morgenstern in showing that non-cooperative scenarios always have at least one equilibrium. This subject of a biography by Sylvia Nasar names a scenario in which no player can improve their outcome by changing their strategy. For 10 points, name this pioneer of game theory who names an equilibrium and was the subject of the book *A Beautiful Mind*.

ANSWER: John Nash <Droge>

7. A naval arms race between these two countries in the late 19th century was sparked by the construction of the *Captain Prat*. A foreign minister from one of these two countries offered the US permission to use Salta as a military base for a campaign against the other country during the Baltimore Crisis of 1891. Pope John Paul II mediated a conflict between these two countries through the Act of Montevideo. Neither of these countries are Spain, but following the Disaster of Rancagua, one of these countries regained its independence when an army marched over the mountains from the other and won the Battle of Chacabuco. During the Beagle conflict, these two countries fought for control over islands in Tierra del Fuego. For 10 points, name these two South American countries that, with Brazil, comprise the ABC powers.

ANSWER: Chile AND Argentina <Bentley>

8. Late in his life, this hero loses his balance while helping a group of men move a large rock. His wife is a golden-haired woman first seen riding a white horse across the ocean. This hero witnesses his father's castle in ruins, covered by moss and ivy, and is told that his father was a myth who never existed. He is instructed to never let his feet touch the ground, but falls off of his horse and ages three hundred years upon his return from Tír na nÓg. His mother is turned into a deer by an evil druid. This son of Sadhbh ("syve") narrates much of his father's adventures to Saint Patrick in a collection that became the Fenian Cycle. For 10 points, name this son of Finn MacCool, an Irish bard to whom James Macpherson (mc-FEER-sun) attributed many poems.

ANSWER: Oisín (oh-SHEEN) [or Ossian] <Kim>

9. This poet requests that a Naiad "cut your body into turquoise pieces" in a poem that begins, "You are the daughter of the sea". The speaker of a poem by this man commands, "do not look for me, for I shall already have forgotten you". A poem whose speaker declares, "I do not love you as if you were salt-rose, or topaz", was written by this author of "If You Forget Me". The addressee of another of his poems "swallowed everything, like the sea, like time", leading the speaker to proclaim, "In you everything sank!". The speaker bemoans, "Love is so short, forgetting is so long" in this author's "Tonight I can write the saddest lines". For 10 points, name this Chilean poet of *Twenty Love Poems and a Song of Despair*.

ANSWER: Pablo Neruda [or Neftali Ricardo Reyes Basoalto] <Sy>

10. Precancerous lesions in this structure can be treated with conization techniques such as cold-knife resection and LEEP. The normal process of ectropion results in squamous cell invasion in this structure's transformation zone, which is particularly susceptible to CIN. A small, circular opening in this structure called the external os changes into a transverse slit as a result of parturition. The HeLa (hee-luh) cell line is derived from cancerous cells in this structure. This structure secretes thin mucus, having a similar consistency to egg whites, around ovulation. Dysplasia in this structure, such as that caused by HPV, can be detected with a Pap smear. For 10 points, name this structure connecting the uterus to the vagina that dilates during labor.

ANSWER: cervix <Smart>

11. This author wrote, "Be not chimera of morning, half-man, half-star" in a poem inspired by William Carlos Williams's "El Hombre". One of this author's poems describes "such novelties of the sublime, such tink and tank and tunk-a-tunk-tunk". Another poem by this author describes houses that are "haunted by white night-gowns" and later tells of a sailor who "catches tigers in red weather". In his poem "A High-Toned Old Christian Woman", this author declared that "Poetry is the supreme fiction", a phrase he reused in the title of one of his long poems. Another of his poems includes the line, "Let be be finale of seem". For 10 points, name this modernist American poet of "Disillusionment of Ten O'Clock" and "The Emperor of Ice-Cream".

ANSWER: Wallace Stevens <Golimlim>

12. Organic halides of this element are produced with a copper catalyst in the direct process. Synthesis of bonds between this element and carbon can be accomplished with the platinum-based Karstedt's catalyst. Increased stability is conferred to carbo-cations when an atom of this element is placed beta to the hypovalent carbon. Alcohol protecting groups containing ethers of this element can be removed with tert-butylammonium fluoride. NMR shifts are calibrated in reference to a tetramethylated form of this element. It can be purified by chemical vapor deposition through the Siemens process. Its oxide is used to pack chromatography columns and TLC plates, and is a commonly used desiccant (DESS-ih-kuhnt). Various trace compounds plus this element's oxide constitute most glass. For 10 points, name this element used in most semiconductor wafers.

ANSWER: silicon [or Si] <Nagari>

13. Segments of an interstate bridge were floated upriver from North Kingstown to this city as part of the Iway project. This city's Waterplace Park holds gatherings during which several fires are lit in a circular pattern just above the surface of the Woonasquatucket (woo-NOSS-qua-tucket) River. A notably gigantic statue of a blue termite serves as a roadside attraction in this city. The Seekonk River meets this city's namesake river at Fox Point, a former hub of the Atlantic slave trade. This city's College Hill is home to the oldest Baptist church in the United States. This capital city lies at the northern end of Narragansett Bay and was founded by Roger Williams. For 10 points, name this home of Brown University and capital of Rhode Island.

ANSWER: Providence, Rhode Island <Golimlim>

14. Under the tutelage of Victor Bertin (bare-TAN), this artist made many small sketches called *pochades* (po-SHODS) that he rarely developed into full canvases. This artist painted a mother and her girls picking shrubbery off a thin tree, next to a much larger tree casting a huge shadow on a lake, in his canvas *Souvenir de Mortefontaine*. He painted many views of the pond overlooking the property he inherited at Ville-d'Avray. This artist painted an on-the-spot depiction of the Castel Sant'Angelo and St. Peter's cupola in his canvas *View of Rome*, produced on an 1825 trip to Italy, which also informed his painting of a ruined Roman arch bridge at Narni. For 10 points, name this oft-forged French landscape artist whose *en plein air* painting inspired the Impressionists.

ANSWER: Camille Corot [or Jean-Baptiste-Camille Corot] <Gupta>

15. The Overland Relief Expedition rescued around 200 people working in this industry. Workers in this industry often used a phrase combining the name of a city with the word "sleighride". George Pollard led a contingent of workers in this industry who resorted to cannibalism after an 1820 disaster described in a Nathaniel Philbrick book. A failed plan to blockade Charleston Harbor involved filling objects used in this industry with stone. A prized product of this industry was spermaceti (sperm-uh-SET-ee), and another of its products was once a common ingredient in perfumes. This industry was a lifeline for towns such as New Bedford and Nantucket. For 10 points, name this industry that harvested ambergris and oil, and was fictionalized in *Moby Dick*.

ANSWER: whaling [or word forms; prompt on fishing] <Golimlim>

16. A battle ax, a cup, a yoke, and one of these objects fell from the sky and were claimed by Scythes, the ancestor of the Scythians. The nymph Myrmex was turned into an ant for claiming to have invented this object. Boötes (boh-OH-teez) was turned into a constellation for his ingenuity at handling this object. After encountering a man using this object while carrying a bag of salt, Palamedes tricked that man, Odysseus, into confirming that he was sane, by placing Telemachus in front of this object. Aeëtes (ee-EE-teez) challenged Jason to capture two fire-breathing bulls, then to use one of these tools to create an area to place some dragon teeth. For 10 points, Demeter inspired Triptolemus to invent what tool so that he could teach Greeks to prepare fields for planting?

ANSWER: **plows** <Brownstein>

17. The speaker of this poem describes humanity as "children afraid of the night who have never been happy or good" and asks, "Who can live for long in a euphoric dream?" after mentioning "blind skyscrapers". This poem makes reference to "exiled Thucydides", who "knew all that a speech can say about democracy", and it declares a quotation about Diaghilev by Nijinsky to be universal. Its speaker posits that "the windiest militant trash" is not as crude as the normal human wish: "not universal love, but to be loved alone". It begins as the speaker sits in one of "the dives on Fifty-Second street", and famously proclaims, "We must love one another or die". For 10 points, name this W. H. Auden poem, titled for the day on which World War II began.

ANSWER: "**September 1, 1939**" <Sy>

18. In the book *The Eudaemonic Pie*, Thomas Bass described how Norman Packard used an oscilloscope and a trig formula in this general activity to help start a scientific community. A strategy in this activity is the origin of the statistical term "martingale" and involved doubling a certain quantity and stopping after a finite time. A random variable with infinite expected value in this activity is the subject of the St. Petersburg paradox. Claude Shannon and Edward Thorp's original application of the Kelly criterion was to this activity. A fallacy named after a practitioner of this activity states that people incorrectly believe that an event is less likely to happen after it has happened X times. For 10 points, a specific instance of what general type of activity is described in *Bringing Down the House*, an account of card counting?

ANSWER: **gambling** [or obvious equivalents, such as **betting** money or **wagering** money; anti-prompt on roulette] <Jose>

19. This institution once refused to return items, for which it paid a fifteen-talent guarantee, during the reign of "the Benefactor". The possessions of this institution were catalogued in the *Pinakes* composed by Callimachus. The "charakitai" were employed at this facility, which had a "daughter" institution known as the Serapeum. A fifty-man synodos organized this institution in 283 BC at the order of Ptolemy Soter, who founded it as part of the larger Mouseion. In the 4th century AD, it was closed by the Coptic Pope Theophilus, and it was later burned, possibly by invading armies under 'Amr ibn al-'As. For 10 points, name this institution which collected seventy thousand papyrus scrolls as the center of Hellenistic learning.

ANSWER: **Library of Alexandria** [or **Mouseion** until it is read] <Weiner>

20. Isabelle Lavigne chronicled the social lives of practitioners of this dance in her documentary *At Night, They Dance*. Small cymbals held between fingers, known as *zils*, often specify 9/8 rhythms in a regional variant of this dance. Its common Western name was coined to describe the variant practiced by the Ouled Naïl (OO-led NILE) tribe. Elements from hip hop and flamenco appear in the Westernized "Tribal Fusion" style of this dance. Common moves in this style of dance include the "Figure 8" and the "shimmy". Performers of this type of dance generally wear a skirt below a sequin-decorated fitted belt and bra, and sometimes carry a veil. For 10 points, name this type of Middle Eastern dance whose performers move their hips and exposed midriffs.

ANSWER: **belly** dance [or Turkish **oriental** dance; or Raqs **Sharqi**; or Raqs **Beledi**; prompt on hoochie coochie dance] <Gupta>

21. A race for this legislative position is much of the focus of the book *Means of Ascent*. That race for this post featured an injunction stayed by Hugo Black at the behest of Abe Fortas, thwarting the desire of Coke Stevenson to win this position. While holding this position, a man said "Jack Kennedy was a friend of mine" before telling Dan Quayle "you're no Jack Kennedy" during the 1988 vice-presidential debates. A man was nominated for this position in a 1948 primary that he won by 87 votes, giving him the nickname "Landslide". That man, while in this position, used his "The Treatment" intimidation technique to convince fellow legislators to vote his way. For 10 points, name this legislative position held in the 1970s by Lloyd Bentsen and from 1949 to 1961 by Lyndon Johnson.

ANSWER: **Senator** from **Texas** [prompt on Senate Majority Leader; prompt on Senator] <Cheyne>

1. In a painting by this artist, a heavily-garlanded Pan sprawls in front of an eagle, flanked by a female personification of Death, who holds a bloody sword, and one of Pain, who wears a crown of thorns. For 10 points each:

[10] Name this French artist renowned for his colorful erotic paintings of Biblical and mythological scenes, such as *Jupiter and Semele* and *Oedipus and the Sphinx*.

ANSWER: Gustave Moreau

[10] Gustave Moreau, Pierre Puvis de Chavannes (pyoo-VEED shah-VAHN), and Odilon Redon belonged to this art movement preoccupied with fantastical, imaginative, and sensuous images. It coexisted with a similarly-focused literary movement led by Verlaine (vair-LEN) and Rimbaud (ram-BOH).

ANSWER: Symbolism [or word forms, such as Symbolist]

[10] In *The Apparition*, Moreau painted the Biblical Salome pointing to the floating, haloed, and decapitated head of this saint.

ANSWER: John the Baptist [or John the Baptizer; or Ioannes; or Johannes; prompt on John]  
<Golimlim>

2. After his time in office, this man led a namesake commission to establish military relations with Russia after its civil war. For 10 points each:

[10] Name this Secretary of War who wrote the charter for governing the Philippines and eliminated tariffs on goods from Puerto Rico. He succeeded John Hay as Secretary of State, and used that position to negotiate an agreement with Takahira Kogoro.

ANSWER: Elihu Root

[10] Elihu Root was the primary author of this law, which established civil government in Puerto Rico.

ANSWER: Foraker Act [or Organic Act of 1900; prompt on Organic Act]

[10] The Foraker Act was signed in 1900 by this president, who was shot the next year by the Polish anarchist Leon Czolgosz (CHOLE-gosh).

ANSWER: William McKinley <Pari>

3. Answer some stuff about spam, for 10 points each.

[10] Spam can be filtered using programs reliant on this man's theorem, which gives the probability of an event occurring given that some other events have already occurred.

ANSWER: Bayes' theorem [or Thomas Bayes]

[10] Many spam filters make use of this man's namesake "networks", in which each next state is dependent only on the current state.

ANSWER: Andrey Markov [or Markov chains; or Markov networks]

[10] This theorem from mathematics states that some tasks can never be fully optimized, no matter how many people work on it. Spam filtering is one such task.

ANSWER: full-employment theorem <Jose>

4. This character is switched at birth with "Shiva of the Knees" by the nurse Mary Pereira. For 10 points each:

[10] Name this character, who uses his telepathic nose to communicate with other people who were born at the exact moment of India's independence.

ANSWER: Saleem Sinai [or Saleem Sinai]

[10] Saleem is one of the 1,001 people who have special powers due to the timing of their births in this novel by Salman Rushdie.

ANSWER: Midnight's Children

[10] Saleem is born on an estate that belongs to this Englishman. This man forces the people living on his estate to keep his six o'clock cocktail hour.

ANSWER: William Methwold [or William Methwold] <O'Rourke>

5. This figure will die from a fatal kidney ailment without your help. For 10 points each:

[10] What nameless figure was created for a 1971 thought experiment in which his circulatory system is forcibly plugged into you, a person kidnapped because you are the only person with the right blood type to save this figure?

ANSWER: a violinist [prompt on musician]

[10] Judith Thomson's violinist is part of a thought experiment meant to defend the legality of this practice, as it analogizes unplugging the forceful attachment to the violinist as equivalent to this practice sometimes engaged in by pregnant women.

ANSWER: abortion [or obvious equivalents]

[10] This other ethical thought experiment, most famously used by Lawrence Kohlberg to explain moral development, imagines a man named Heinz thinking about if it was right to steal this thing on behalf of his wife.

ANSWER: a drug [or medicine; or radium; or obvious equivalents] <Cheyne>

6. The speaker of this poem discourages being "like the quarry-slave at night" when going to "join the innumerable caravan". For 10 points each:

[10] Name this poetic "meditation on death" mostly written when the author was 17 years old.

ANSWER: "Thanatopsis"

[10] This American poet wrote "Thanatopsis" and wrote about a bird that pursues its "solitary way" in "To a Waterfowl".

ANSWER: William Cullen Bryant

[10] This Bryant poem expresses the wish that at death, "hope, blossoming within my heart, may look to heaven as I depart". It is addressed to a "blossom bright with autumn dew".

ANSWER: "To the Fringed Gentian" <Sy>



7. Along with Birutė Galdikas and Jane Goodall, this woman was one of the three "Trimates". For 10 points each:

[10] Name this anthropologist who wrote the book *Gorillas in the Mist*. She was found murdered in 1985, possibly as a result of her conservation activities.

ANSWER: Dian **Fossey**

[10] The so-called "Trimates" were three researchers on primates assembled by anthropologist Louis Leakey, who, with his wife, Mary, found numerous hominid fossils at this site in the Great Rift Valley.

ANSWER: **Olduvai** Gorge

[10] Jane Goodall was best known for studying these apes. Bonobos are a species of this ape, which is considered humanity's closest living relatives.

ANSWER: common **chimpanzees** [or **chimps**] <Cheyne>

8. Karen Armstrong argued that the second of these periods was during the Enlightenment. For 10 points each:

[10] What period, according to Karl Jaspers (YOSS-pers), lasted from the 8th to 3rd centuries BC, and was marked by a high amount of parallel development in religious thinking throughout areas such as Iran, Palestine, and China?

ANSWER: **Axial Age**

[10] Jaspers outlined the Axial Age in his introduction by noting that this Chinese philosopher, whose writings were collected in the *Analects*, was active in the same few centuries as religious leaders like Buddha and Zoroaster.

ANSWER: **Confucius** [or **Kǒngzǐ**; or **Kǒng Fūzǐ**; or **Kǒng Qiū**]

[10] Jaspers was heavily influenced by the histories of religions written by this man. He wrote the books *The Religion of China* and *The Religion of India*, but is better known for analyzing Christianity.

ANSWER: Karl Emil Maximilian "Max" **Weber** <Cheyne>

9. Jocelyn Bell Burnell made the first observations of these objects. For 10 points each:

[10] Identify these astronomical objects that Thomas Gold correctly predicted were highly magnetized, rapidly rotating neutron stars.

ANSWER: radio **pulsars**

[10] Thomas Gold's prediction about the nature of pulsars was confirmed by the observation of a pulsar in this nebula, a remnant of SN 1054.

ANSWER: **Crab** Nebula

[10] Donald Backer was the first to discover a pulsar denoted by this term. Another pulsar denoted by this term was discovered by Aleksander Wolszczan (VOLE-chahn) and was where the first exoplanets were discovered.

ANSWER: **millisecond** [or answers indicating a pulsar with a period of **one to ten milliseconds**]

<Voight>

10. This event was carried out by George Cockburn, partially in retribution for the Raid on Port Dover that had occurred earlier in the year. For 10 points each,

[10] Name this event in which the office of the *National Intelligencer* was dismantled. It occurred in the aftermath of the Bladensburg Races.

ANSWER: **sack of Washington**, D.C. [or **burning of Washington**, D.C.; or obvious equivalents]

[10] According to an apocryphal legend, this first lady saved an iconic painting of George Washington when the White House was burned.

ANSWER: **Dolley Madison** [or Dolley Payne Todd **Madison**; prompt on **Madison**]

[10] Another apocryphal story relates how Dolley Madison was the first person to serve this food at the White House, having obtained the recipe from the freed slave Sallie Shadd.

ANSWER: **ice cream** <Droge>

11. A scandal involving this company is being investigated under Operation Car Wash. For 10 points each:

[10] Name this state-owned oil company that allegedly gave over 200 million dollars in bribes to the ruling Workers' Party.

ANSWER: **Petrobras** [or **Petróleo Brasileiro** S.A.]

[10] This former President of Brazil was named chief of staff by his successor Dilma Rousseff in order to shield him from prosecution related to the Petrobras scandal.

ANSWER: Luiz Inácio **Lula** da Silva

[10] While president, Lula passed this social welfare program, which gives financial aid and free education to poor Brazilians.

ANSWER: **Bolsa Familia** [or **Family Allowance**] <Raje>

12. The title character believes he survives the explosion of the *Wildebeest* in this author's novel *Pincher Martin*. For 10 points each:

[10] Name this English author better known for depicting a group of boys left alone on an island in *Lord of the Flies*.

ANSWER: William **Golding** [or William Gerald **Golding**]

[10] In this Golding novel, the drunken novelist Wilfred Barclay undergoes a life change after he mistakes the scholar Rick Tucker, who is searching through his garbage for fragments of his work, for a badger.

ANSWER: *The **Paper Men***

[10] This other Golding novel follows Lok and his tribe of Neanderthals as they are superseded by modern humans.

ANSWER: *The **Inheritors*** <Sy>

13. This composer's *Philomel* begins with the soprano soloist simply vocalizing the syllable "eeh" at various pitches, against the backdrop of a synthesizer and a recorded soprano. For 10 points each:

[10] Name this American composer who argued that dismissing modern music was just as absurd as dismissing advanced mathematics in the 1958 article "Who Cares If You Listen?".

ANSWER: Milton **Babbitt** [or Milton Byron **Babbitt**]

[10] This contemporary of Babbitt used electronic instruments such as turntables and tape recordings in his five *Imaginary Landscapes*, and explored ambient sounds in his entirely silent composition *4 Minutes 33 Seconds*.

ANSWER: John **Cage** [or John Milton **Cage** Jr.]

[10] This American composer's string quartet *Different Trains* is accompanied by tape recordings of interviews with Holocaust survivors.

ANSWER: Steve **Reich** [or Stephen Michael **Reich**] <Kim>

14. *The Hypatian Codex* mentions how this king defended the city of Voruta against men such as the Duke of Samogitia, Vykintas. For 10 points each:

[10] Name this man whose coronation as the first Grand Duke, and only King, of Lithuania is celebrated as Statehood Day on July 6.

ANSWER: **Mindaugas**

[10] After being baptized as a Catholic, Mindaugas formed an alliance with the Livonian Order, a branch of this order that protected Christians on their pilgrimages and was involved in the Northern Crusades.

ANSWER: **Teutonic** Order [or **Teutonic** Knights]

[10] This Prince of Novgorod formed a coalition to oppose Mindaugas, and also defeated the Livonian Order at the Battle of the Ice.

ANSWER: Alexander **Nevsky** [or Alexander Yaroslavich **Nevsky**] <Pari>

15. Presynaptic neurons with this category of output typically express the biomarkers parvalbumin and somatostatin. For 10 points each:

[10] Name this type of presynaptic output often produced by GABA-ergic neurons, which reduces the likelihood of the postsynaptic neuron generating an action potential, as compared to the usually excitatory glutamatergic neurons.

ANSWER: **inhibitory** postsynaptic action potential [or **IPSP**]

[10] Postsynaptic inhibitory neurotransmitter receptors for both GABA and this smallest amino acid are anchored by gephyrin (JEFF-rin). Like serine, it co-activates NMDA receptors with glutamate.

ANSWER: **glycine** [or **Gly**]

[10] Gephyrin (JEFF-rin) is required for the biosynthesis of cofactors using this metal. Nitrogenases, which uniquely don't use such a cofactor, conjugate glutamate with ammonia using subunits containing iron, sulfur, and this metal.

ANSWER: **molybdenum** [or **Mo**] <Smart>

16. Sōichi Sunami was able to dodge Japanese internment by serving as the official staff photographer for this institution for forty years. For 10 points each:

[10] Name this New York art museum where Edward Steichen curated the Family of Man exhibition.

ANSWER: MoMA [or Museum of Modern Art]

[10] MoMA trustees withdrew funding from a poster overlaying the text "And babies" on Ronald L. Haeberle's shocking photograph of slaughtered women and children in the aftermath of the Mỹ Lai (mee-lye) Massacre during this war.

ANSWER: Vietnam War

[10] In 1948, this mononymic Hungarian photographer, whose nighttime photographs were collected in the book *Paris After Dark*, was honored with a one-man show at the MoMA.

ANSWER: Brassai [or Gyula Halasz] <Gupta>

17. Thiols are commonly used to form hexagonally symmetric self-assembled monolayers on surfaces comprising this element. For 10 points each:

[10] Name this element that is commonly extracted using the cyanide process. The Turkevich method is used to make nanoparticles of this element, solutions of which are red or purple.

ANSWER: gold [or Au]

[10] Complexes of gold in the plus-three oxidation state usually adopt this geometry in which four ligands are located at right angles to their neighbors.

ANSWER: square planar

[10] Six gold-phosphine ligands can coordinate a single carbon atom since their high electropositivity significantly raises the energy of this set of orbitals. In tetrahedral transition metal complexes, this set of orbitals is lower in energy than the t-sub-2g set.

ANSWER: e-sub-g <MacAulay>

18. The protagonist of an 1844 novel meets Abbé Faria in this location. For 10 points each:

[10] Name this fortress where a man is imprisoned by Villefort after being betrayed by his crewmate Danglars.

ANSWER: Château d'If

[10] Château d'If is a setting for *The Count of Monte Cristo* by this French author, who also created Athos, Porthos, and Aramis.

ANSWER: Alexandre Dumas

[10] In *The Count of Monte Cristo*, Edmond Dantès is accused and imprisoned on the day he is to marry this lover of his, who later marries Fernand.

ANSWER: Mercédès Herrera [or Mercédès Herrera; or Mercédès Mondego] <Pari>

19. After his wife announces her pregnancy, this man accuses her of infidelity, causing her to lock herself in a house and light it on fire, from which emerge his three sons. For 10 points each:

[10] Name this man who is sent to earth with the Three Imperial Regalia to plant rice.

ANSWER: Ninigi-no-Mikoto

[10] Ninigi is the grandson of this Shintō goddess of the sun who hides in a cave after having a flayed pony hurled at her by her brother Susano'o.

ANSWER: Amaterasu-omikami [or Ohirume]

[10] Yasakani no Magatama, one of the Three Regalia, was one of these objects. Ryūjin used two of these objects to control the ebb and flow of the tides.

ANSWER: jewels [or beads] <Nagari>

20. Two million citizens of these countries demonstrated for independence by creating a 420-person long human chain. For 10 points each:

[10] Identify this group of countries that regained their independence in the late 1980s through a series of events called the Singing Revolution.

ANSWER: Baltic states or countries [or Estonia, Latvia, and Lithuania in any order]

[10] The Singing Revolution occurred under this successor of Konstantin Chernenko, who liberalized the Soviet Union via his policies of *glasnost* and *perestroika*.

ANSWER: Mikhail Gorbachev

[10] Gorbachev allowed Warsaw Pact countries to determine their own internal affairs as part of a doctrine jokingly named after this American.

ANSWER: Frank Sinatra [or Sinatra Doctrine] <Kendrick>

21. Linus Pauling developed a scale for this quantity on which hydrogen has a value of 2.2. For 10 points each:

[10] Name this quantity that describes an atom's ability to attract electrons in a covalent bond.

ANSWER: electronegativity

[10] Robert Mulliken defined electronegativity as proportional to the arithmetic mean of the first ionization energy and this quantity. Chlorine has a more positive value than fluorine, owing to its lower level of interelectronic repulsion.

ANSWER: energy of electron affinity [prompt on E-sub-a]

[10] The presence of vicinal electronegative groups on alkenes tends to decrease the magnitude of these quantities. These quantities are plotted against dihedral angles in the Karplus curve for NMR.

ANSWER: NMR coupling constants [or J-coupling constants] <MacAulay>