



NSC 2018 - Round 21 (Tiebreaker 3) - Tossups

1. A Mahmood Mamdani book titled for the "myth" regarding the "control" of this quantity questioned researchers who extrapolated local effects from the Khanna study. This quantity is multiplied by "affluence" and "technology" terms in an equation for environmental impact. The author of a 1968 bestseller warning about increases in this quantity lost a bet with Julian Simon about its effects on commodity prices. This quantity undergoes an (*) "explosion" between stages two and three in Warren Thompson's demographic transition model. Paul and Anne Ehrlich wrote about this concept's "bomb." The arithmetic growth of food production and the exponential growth of, for 10 points, what quantity led to Thomas Malthus's predictions of famine?

ANSWER: population [or world population; or human population; or population size; accept adult population or similar answers; accept other answers indicating the number of humans in the world or similar]
<Kothari, Social Science - Other>

2. This non-French artist began his neoclassical phase after the gunsmith William Henry encouraged him to produce the 1756 engraving *The Death of Socrates*. This painter equated artists with historians through his concept of "epic representation," which he used in his historical works *The Battle of the Boyne* and *The Death of Nelson*. A bayonet, a musket, and a box of cartridges line on the ground in front of the feet of the title figure of a painting by this artist, which establishes a (*) "triangular composition" with the large British flag in the center background. This artist depicted a kneeling Native American with his chin touching a fist in a painting taking place in the aftermath of the Battle of the Plains of Abraham. For 10 points, name this painter of *The Death of General Wolfe*.

ANSWER: Benjamin West
<Jose, Arts - Painting>

3. The resonating valence bond theory explains this property, which occurs in many strongly correlated systems, such as certain "heavy fermion" compounds and cuprate complexes. Commonly used materials with this property include alloys of either tin or titanium with niobium. One theory of this property was confirmed by replacing natural mercury with mercury-198 to demonstrate the isotope effect; that theory posits that (*) phonons mediate the condensation of electrons into bosonic quasiparticles. BCS theory describes materials with this property, whose "high temperature" form involves a critical transition above the boiling point of liquid nitrogen. For 10 points, name this property where a material displays zero electrical resistance.

ANSWER: superconductivity
<Mukherjee, Science - Physics>

4. The protagonist of a novel set in this country hides away rare books while operating a wastepaper compactor for thirty-five years. In a satirical novel from this country, Otto Katz loses a game of cards on which he wagers the title character, who previously stole dogs and falsified their pedigrees to sell them. This country is the setting of *Too Loud a Solitude*, as well as a novel in which a surgeon loses his job for refusing to (*) retract an article comparing a ruling party to Oedipus. The author of *The Good Soldier Švejk* (shvayk) is from this country, which is the setting of a play in which Alquist declares Primus and Helena a new Adam and Eve. For 10 points, name this country, the origin of Karel Capek's *R.U.R.* and Milan Kundera's *The Unbearable Lightness of Being*.

ANSWER: Czechoslovakia [or the Czech Republic; or Czechia]

<Bollinger, Literature - European>

5. Some of these things were named after pairs of men and women, like U and Polu, who were shaped from maggots that grew from a rotting vine which spread over these things. Pliny the Elder described a pair of them made of gold and silver named Chryse and Argyre. Some of these things were created in a process called *kuniumi*, when salt crystals fell off a jeweled spear. Two of these things separated because (*) fishermen got distracted by the moon goddess Hina floating in a calabash gourd. Eight of these things, including Awaji and Tsushima, were created during the second, successful, ritual marriage of Izanagi and Izanami. Maui used jawbone as a fish hook to pull some of these places out of the ocean. For 10 points, name these places that make up Hawai'i.

ANSWER: islands [accept islands of Samoa (or equivalents) before "Pliny"; prompt on landmass(es)]

<Grames, RMP - Other Myth>

6. A failed mission led by this man was completed 100 years later by Henry Worsley. Frank Hurley captured color photos of a mission led by this man that included an unexpected trip in the *James Caird*. Raymond Priestley suggested that "when you are in a hopeless situation," you should "get down on your knees and pray for" this explorer. Meteorologist Jameson Boyd Adams was the second-in-command on this man's Nimrod Expedition. He had a falling-out with (*) Robert Falcon Scott after an aborted 1902 expedition. Later, he turned back 97 miles away from a destination that would soon be reached by Roald Amundsen. His crew got trapped on Elephant Island during the Imperial Trans-Antarctic Expedition. For 10 points, name this polar explorer who saved the stranded crew of the *Endurance*.

ANSWER: Sir Ernest Henry Shackleton

<Bentley, History - European>

7. This scientist names a family of matrix proteins that include CASPs and stacking proteins known as GRASPs. The most common interneurons of the granular layer of the cerebellum are named after this scientist. Brefeldin A inhibits the transport of molecules to a structure named for this man. This scientist names a lab technique in which potassium dichromate and silver nitrate are used in a (*) "black reaction"; that staining technique was used by Santiago Ramón y Cajal to discover neurons. Vesicles can transport proteins between the endoplasmic reticulum and a structure named for this man, which is comprised of flattened membrane discs known as cisternae. For 10 points, identify this scientist who names a cellular "apparatus" that packages proteins.

ANSWER: Camillo Golgi

<Ramswami, Science - Biology>

8. This man holds his hand to his face in a listening pose while seated under a rainbow in George Peter Alexander Healy's painting *The Peacemakers*. Thick black lines are drawn around his eyes in Marsden Hartley's painting *The Great Good Man*. John Crerar bequeathed the money to commission a somber seated statue of this man for Grant Park in Chicago. This man is posed in front of an eagle-backed chair in a sculpture of him "standing" by (*) Augustus Saint-Gaudens. Ernest C. Bairstow decorated the friezes of a temple to this man designed by the architect Henry Bacon that features two walls inscribed with his words around a large marble sculpture of him by Daniel Chester French. For 10 points, name this US President whose memorial contains his Gettysburg Address.

ANSWER: Abraham Lincoln [or Abe Lincoln]

<Bentley, Arts - Sculpture>

9. In this state in the 1920s, William Hale orchestrated bombings and assassinations to gain control over valuable mineral rights. The book *Killers of the Flower Moon* centers on the FBI's role in investigating a reign of terror in this state against the oil wealth of the Osage (oh-sage) Indians. Many people sneaked into the (*) Unassigned Lands opened to white settlers in this modern-day state before the official bugle horn sounded on April 22, 1889. A few years later, land speculators rushed to the Cherokee Strip in this state on land ceded from one of its "Five Civilized Tribes." Native Americans were sent to Indian Territory, now this modern day state, on the Trail of Tears. For 10 points, name this state where the Tulsa Race Riot took place.

ANSWER: Oklahoma

<Bentley, History - American>

10. This character owns a "big black valise that looked like the head of a hippopotamus" into which she places a cat. This character wears white gloves and a navy blue dress so that if she dies, people will know she was a lady. She tells a story about receiving watermelons with the initials E.A.T. carved into them from her suitor Mr. Edgar Atkins Teagarden. This character, who hears a story's title (*) phrase at Red Sammy's Famous Barbecue, realizes that a plantation from her memory was really in Tennessee right before her son Bailey gets into a car accident. Shortly thereafter, this woman encounters a criminal known as The Misfit. For 10 points, identify this elderly character from Flannery O'Connor's "A Good Man Is Hard to Find" who is named only for her familial role.

ANSWER: the grandmother

<Bentley, Literature - American>

11. Along with the assembler and the shell, Ken Thompson developed the first one of these programs for the UNIX operating system. Bram Moolenaar created an "improved" version of one of these programs. One of these programs is implemented using its own namesake dialect of Lisp. Proponents of one of these programs often mock another's non-intuitive exit sequence, which is colon, Q, exclamation point. These programs are often packaged alongside a (*) debugger and build automation tools as primary components of an IDE (I-D-E). A "war" between programmers concerns two of these programs named *vi* (vee-eye) and Emacs. For 10 points, name these programs for writing and manipulating source code, a basic example of which is Microsoft Notepad.

ANSWER: plain text editors [accept source code editors until the end; prompt on notepad or IDE or integrated development environment until read; do not accept or prompt on "rich text editors" or "word processors"]

<Minarik, Science - Computer Science>

12. During a play by this author, the lights go out as an air raid blows up the stock of dynamite owned by the inventor Captain Shotover during a dinner party held by Hesione Hushabye (heh-SYE-oh-nee hush-ah-bye). This author called that play "A Fantasia in the Russian Manner on English Themes." This author wrote a play in which the title woman decides to stay with the "weaker" of two suitors, her husband Reverend James Morrell, rather than the poet (*) Eugene Marchbanks. In another play by this author of *Heartbreak House*, the Greek scholar Adolphus Cusins inherits the munitions empire of Andrew Undershaft, who disillusiones his daughter by donating to the Salvation Army. For 10 points, name this playwright of *Candida* and *Major Barbara*.

ANSWER: George Bernard Shaw

<Bollinger, Literature - British>

13. A short piece titled for this genre by Charles Gounod (sharl goo-NOH) reworks material from a planned satirical depiction of the critic Henry Chorley. In a symphony movement in this form "in the manner of Callot" (kah-YO), a klezmer band repeatedly interrupts the main theme, which represents a procession of animals drawn in a woodcut by Moritz von Schwind. That movement of this type, based on the round "Frère Jacques" (FRAIR-uh JOCK-uh), is the third movement of (*) Mahler's First Symphony. Duke Ellington's "Black and Tan Fantasy" samples a B-flat minor third movement in this form in Chopin's (sho-PAN's) Piano Sonata No. 2. Beethoven made one of these pieces the second movement of his *Eroica Symphony*. For 10 points, name these slow, somber pieces depicting processions of mourners.

ANSWER: funeral march [accept *Trauermarsch* or *marche funebre*; accept *Funeral March of a Marionette* or *Marche funèbre d'une marionnette*; prompt on march]

<Bollinger, Arts - Music>

14. It didn't take place in China, but during this conflict, the government enacted a policy to "get at the fish by draining the sea." Declining oil revenues led to the targeting of the gold-mine-controlling Beni Hussein in later phases of it. This conflict began after attacks by the SLM and Justice and Equality Movement on the government. Many of the atrocities carried out against non-Arabs during this conflict were by "evil men on horseback." Some 300,000 refugees from this conflict found shelter in camps in eastern (*) Chad, fleeing from Janjaweed militiamen of President Omar al-Bashir. In 2004, Colin Powell and George W. Bush declared this conflict a genocide. For 10 points, name this genocide in an African country whose southern half seceded in 2011.

ANSWER: Sudanese genocide [or Darfur genocide; or War in Darfur]

<Bentley, History - World>

15. In the Dzogchen tradition, obtainers of a form of this concept called rigpa gain the ability to dissolve their bodies into rainbow light upon death. The study of this concept is called *pramana* in Sanskrit thought, and it is gained through Vipassana meditation. The Diamond sutra is a member of a genre of sutras named for the perfection of this concept; that genre is called *prajnaparamita*. A common division of the eightfold path separates it into factors of (*) virtue, samadhi, and this concept. Hinduism and Buddhism refer to this concept with the word "jnana." Gaining this concept directly opposes Avidya, a concept common translated as ignorance. For 10 points, name this general concept that provides a deeper understanding of reality and may be gained from a teacher.

ANSWER: knowledge [accept wisdom; accept insight; accept realization; prompt on prajnaparamita before "prajnaparamita"; prompt on enlightenment]

<Wang, RMP - Other Religion>

16. In addition to his work on polymers, Nobel Laureate Pierre-Gilles de Gennes (Pierre-ZHEEL duh ZHEN) wrote a pioneering 1974 textbook about the physics of these materials, which can be affected by an external electric field in the Fréedericksz (FREE-durr-icks) transition. Classes of these materials include thermotropic and lyotropic. They were discovered when Friedrich Reinitzer (RYE-nit-ser) observed two distinct melting points in cholesteryl (ko-LESS-tuh-RILL) benzoate, and possess short-range but not long-range (*) order. A tilt order parameter is necessary when modeling layers present in the smectic phase, while the simplest phase of these materials is the nematic. They are named for having characteristics of both fluids and ordered solids. For 10 points, identify these materials used in electronic displays.

ANSWER: liquid crystals [prompt on partial answer]

<Prieto, Science - Chemistry>

17. This author explained how the "red blood" of a young goat will stain the "icy waters" of the title "noble fountain" in a poem addressed to the Bandusian spring. He noted that "lame-footed Punishment rarely forgets the wicked man" in a poem that also asserts that Virtue "shines out with its honor unstained." A letter by this man addressed to Lucius Calpurnius Piso and his sons coined such phrases as "as is painting, so is poetry" and "even good (*) Homer nods" and warns against the use of *deus ex machina*. A collection by this man contains a poem that asserts "it is sweet and proper to die for the fatherland," as well as a poem that coined a term meaning "seize the day," "carpe diem." For 10 points, name this Roman author of *Ars Poetica* and four books of *Odes*.

ANSWER: Horace [or Quintus Horatius Flaccus]

<Carson, Literature - World>

18. In this country, tax agency head Pravin Gordhan lost much of his power for going after a tobacco company owned by a son of its former president. A politician from this country with a love for exotic cattle breeds who also owns a McDonalds franchise is nicknamed "McBuffalo." That man edged out a woman known as NDZ to succeed her ex-husband as its president. Ajay, Atul and Tony (*) Gupta had great influence on a president of this country who resigned in February 2018. The Economic Freedom Fighters agitate for swifter land transfer to blacks in this country to fulfill a stalled pledge from a 1994 power transfer from F. W. de Klerk. For 10 points, name this country where Cyril Ramaphosa succeeded Jacob Zuma as head of the African National Congress.

ANSWER: South Africa [or Republic of South Africa]

<Bentley, Current Events - Foreign>

19. Jean-Paul Sartre protested a 1966 one of these events centered on the translator Yuli Daniel. Claims made about one man during a series of these events were found to be false by a commission headed by John Dewey. Andrei Vyshinsky presided over many of these events, including ones centered on engineers believed to engaged in the practice of "wrecking." One of these events "of the sixteen" presented its subjects as members of a "Terrorist Center" that had (*) plotted the murder of Sergei Kirov. Kamenev, Zinoviev, and Bukharin were among the leaders subjected to public events of this type during the 1930s Great Purge, during which they were presented as Rightists and Trotskyists. For 10 points, name this type of judicial proceeding often conducted for show in Stalinist Russia.

ANSWER: Soviet show trials [prompt on synonyms]

<Brownstein, History - European>

20. A threatening letter that Frederick the Great supposedly wrote to this man was actually a hoax authored by Horace Walpole. This man described the ability to learn by observing others as "perfectibility," arguing that "natural man" possesses perfectibility but not reason. This philosopher defined the sovereign, as opposed to the government, as a state's entire body of citizens. This philosopher often compared Paris to an idealized version of his hometown of (*) Geneva. This man argued that civil society began when the first man enclosed land. He opened one of his books with the statement that "man is born free, and everywhere he is in chains." For 10 points, name this philosopher who wrote *Discourse on Inequality* and *The Social Contract*.

ANSWER: Jean-Jacques **Rousseau**

<Nediger, RMP - Philosophy>

21. A person who took this last name was likely the best-known alum of the secretive "flying university" system and was presented with one gram of a certain resource by Warren Harding during a popular tour of the US. A woman with this maiden name was honored alongside Frederic Joliot in 1935. The Sorbonne seat of a man with this surname was inherited by his wife following his fatal 1906 carriage accident. Henri (*) Becquerel shared an honor with two people with this surname. A woman with this last name investigated pitchblende and established an institute in Warsaw to study the second of the two elements she discovered. For 10 points, what last name is shared by Irène (ee-REN) and her parents Pierre and Marie, the latter of whom shared the 1903 Nobel Prize for discovering radioactivity?

ANSWER: **Curie** [prompt on Skłodowska Curie or Joliot-Curie]

<Bentley, History - European>



NSC 2018 - Round 21 (Tiebreaker 3) - Bonuses

1. In her major work, this author described a group of Christians "lying in their blood," stripped naked by Wampanoag "hell-hounds." For 10 points each:

[10] Name this author. Her *The Sovereignty and Goodness of God* describes 11 weeks during King Philip's War.

ANSWER: Mary **Rowlandson**

[10] Mary Rowlandson's story is a text in this genre, which often ends with the author escaping from Native Americans. These texts should not be confused with a similar type of narrative produced by slaves.

ANSWER: **captivity** narratives

[10] The captivity narrative of Hannah Dunstan was popularized in the book *Magnalia Christi Americana*, a book by a minister named Cotton who had this surname. Cotton was the son of another minister of this surname, Increase.

ANSWER: **Mather** [accept Cotton **Mather** or Increase **Mather**]

<Jose, Literature - American>

2. This compound can cleave alkenes to produce either ketones or aldehydes depending on the reaction conditions. For 10 points each:

[10] Identify this compound whose concentration in the atmosphere is measured in Dobson units.

ANSWER: **ozone** [or **O₃**; do not accept or prompt on "oxygen" or "oxygen gas"]

[10] These compounds, used as refrigerants, contribute to depletion of ozone in the atmosphere by producing radicals upon being hit by UV rays. They are partly named for their incorporation of two halogens.

ANSWER: **CFCs** [or **chlorofluorocarbons**; or **Freon**]

[10] Via the ozonolysis reaction, rubber can be degraded in a process given this name. A different process by this name produces naphtha and LPG from high-molecular-weight alkanes with a zeolite catalyst.

ANSWER: fluid catalytic **cracking** [or ozone **cracking**]

<Prieto, Science - Chemistry>

3. This writer helped establish a widespread belief that public opinion is capricious and irrelevant to policy-making in his book *Public Opinion*. For 10 points each:

[10] Name this founding editor of the *New Republic*, whose book *The Phantom Public* initiated a debate with John Dewey about the role of experts and the public in decision-making.

ANSWER: Walter **Lippmann**

[10] Edward Herman and this political writer borrowed a Lippmann phrase to title their book *Manufacturing Consent*. In addition to being an outspoken foreign policy leftist, this man developed the idea of universal grammar as a linguist at MIT.

ANSWER: Noam **Chomsky** [or Avram Noam **Chomsky**]

[10] Lippmann coined the modern usage of this word that, in psychology, names a "threat" demonstrated in a 1995 study by Claude Steele and Joshua Aronson in which black students performed worse on standardized tests when they were described as "diagnostic of intellectual ability."

ANSWER: **stereotypes** [accept **stereotype** threat]

<Kothari, Social Science - Other>

4. Answer the following about Beethoven's inventive use of the timpani. For 10 points each:

[10] In Beethoven's last piece in this genre, the 6/8 rondo contains a passage in which all orchestral instruments but the timpani drop out as the soloist plays a series of E-flat major scales. That work is nicknamed "Emperor."

ANSWER: **piano concertos** [or **piano concerti**; prompt on partial answer; prompt on *Emperor Concerto*]

[10] This Beethoven piece begins its first movement with the timpani striking the note D five times. Joseph Joachim (YO-zef YAW-khim) helped revive this piece after decades of obscurity.

ANSWER: **Violin Concerto** in D major

[10] Timpani sticks cross at the end of Beethoven's eighth piece in this genre, whose central movements parody the metronome and the obsolete minuet. Timpani are unusually tuned in octave Fs, and two timpani are struck at the same time, in his ninth and last piece in this genre.

ANSWER: **symphony** [accept **Symphony No. 8** or **Symphony No. 9**]

<Kothari, Arts - Music>

5. Identify the following about pulque (**POOL-kay**), a type of alcoholic drink, for 10 points each.

[10] Pulque bars were banned after a 1692 riot in this city. A 19th-century riot in this city originated in the Parian market in its Zocalo main square, and this city was heavily damaged by a 1985 earthquake.

ANSWER: **Mexico** City [or **Tenochtitlan**; or City of **Mexico**; or Ciudad de **Mexico**; or **CDMX**]

[10] Aztec elites drank hot beverages made from this substance. Quakers J. S. Fry and John Cadbury made some of the first bars from sugar and the beans of this food.

ANSWER: **chocolate** [or **cocoa** beans; or **cacao** beans; accept **chocolate** bars]

[10] Alongside pulque taxes, the government in New Spain placed export duties on carmine, one of these types of products made from the extract of the cochineal insect.

ANSWER: natural **dye** [or artificial **dye**; prompt on **color**]

<Bentley, History - World>

6. Answer the following about very large numbers, for 10 points each.

[10] This number, which is 10 to the 100th power, is a large number. It is roughly equivalent to 70 factorial, and its name was coined by Edward Kasner's young nephew.

ANSWER: **googol**

[10] Large numbers can be expressed in Knuth notation, which uses these symbols to compactly signify them.

ANSWER: **up arrows** [prompt on **arrows**; prompt on **carets**]

[10] Knuth up-arrow notation is often used to express the output of this function, which takes in pairs of values, and outputs large numbers for relatively small inputs. Computer scientists often study this function because it is recursive, but not primitive recursive.

ANSWER: **Ackermann** function

<Jose, Science - Math>

7. Two of these objects were commissioned on orders of Jeroboam, and their destruction via burning indicates they may have been wooden inside. For 10 points each:

[10] Identify these objects. The most famous one of these objects was created in the Sinai and later turned into a drink that was used to distinguish the faithful from the unfaithful.

ANSWER: **golden calf** [or **golden calves**; prompt on partial answers, idols, statues, cult images, and similar]

[10] The first golden calf was created by Aaron while this man, his brother, was busy receiving the Ten Commandments on Mount Sinai.

ANSWER: **Moses** [or **Mashe**]

[10] This wife of El and mother goddess of the Canaanites, often represented in the form of a tree, was occasionally worshiped from within the Temple in Jerusalem as the consort of Yahweh.

ANSWER: **Asherah** [or **Athirat**; or **Asratum**]

<Bentley, RMP - Bible/Christianity>

8. Identify the following about beaches whose sand is naturally colored pink, for 10 points each.

[10] A pink sand beach can be found on an Indonesian island that shares its name with these creatures. One of these hard-biting animals named Sungai unexpectedly hatched parthenogenetic eggs in a London zoo in 2005.

ANSWER: **Komodo** dragons [or **Komodo** monitor; or *Varanus komodoensis*; accept **Komodo** Island]

[10] Pink sand is often formed by the crushing these organisms. In 2011, an all-white "reef" of these organisms in the Western Mediterranean Sea was discovered.

ANSWER: **coral** [accept **coral** reef]

[10] A small island named Elafonisi, which contains pink sands, can be reached on foot from this other island during low tides. The capital and largest city of this Greek island is Heraklion.

ANSWER: **Crete**

<Jose, Geography - Europe>

9. In this work's "Anna Livia Plurabelle" section, two washerwomen weave the names of more than 300 rivers into a telling of the character Anna Livia's life. For 10 points each:

[10] Name this novel, which was originally published in sections as *Work in Progress*. Some of its sections follow a letter which Anna Livia dictates to her son Shem and entrusts for delivery to her other son Shaun.

ANSWER: ***Finnegans Wake***

[10] This Irish writer wrote *Finnegans Wake* and *Ulysses*.

ANSWER: James **Joyce** [or James Augustine Aloysius **Joyce**]

[10] This writer collaborated with Alfred Péron on a failed translation of "Anna Livia Plurabelle" and linked the novel's structure to Vico's cyclical view of history in his essay "Dante... Bruno. Vico... Joyce." He also wrote a trilogy comprising the novels *Molloy*, *Malone Dies*, and *The Unnamable*.

ANSWER: Samuel **Beckett** [or Samuel Barclay **Beckett**]

<Kothari, Literature - British>

10. The Triumph of Orthodoxy engineered by Theodora largely ended support for this position. For 10 points each:

[10] Identify this stance once popular in the Byzantine Empire wherein many "graven images" were removed from Orthodox churches.

ANSWER: **iconoclasm** [or **Eikonomachía**]

[10] The mania for iconoclasm began during the reign of the Byzantine Emperor, who founded a Syrian dynasty when he took the throne in 717. He also issued the *Ecloga* law code.

ANSWER: **Leo III** [or **Leo the Isaurian**; prompt on **Leo**]

[10] Leo removed Germanus I from this position after Germanus refused to accept his policy on iconoclasm. The holder of this post is "first among equals" in the hierarchy of the Orthodox Church.

ANSWER: **Patriarch** of Constantinople [or Ecumenical **Patriarch**; or His Most Divine All-Holiness the **Archbishop of Constantinople**, New Rome and Ecumenical Patriarch]

<Bentley, History - European>

11. Pointillist paintings set in this place were the subject of a 2017 exhibit at the Met. For 10 points each:

[10] Identify this sort of location, the setting of a nocturnal painting in which Ferdinand Corvi stands next to a trombonist. Another painting in this setting features a woman in a yellow tutu standing on a white horse.

ANSWER: the **circus** [or circus **sideshow**]

[10] *Circus Sideshow* is a painting by this artist of *Sunday Afternoon on the Island of La Grande Jatte*.

ANSWER: Georges **Seurat** (sir-AH) [or Georges-Pierre **Seurat**]

[10] Three people in this profession stand next to part of Seurat's *Sunday Afternoon* in a later Seurat painting. A woman in this profession stands to the right of Gustave Courbet in a painting also featuring Charles Baudelaire.

ANSWER: nude **models** [or professional **models**]

<Bentley, Arts - Painting>

12. In the infinite square well model, this quantity equals zero inside of the well and is infinite at the barrier. For 10 points each:

[10] Name this quantity in electromagnetism. It equals the voltage at a given point times the charge at that point.

ANSWER: electric **potential energy** [prompt on **energy**]

[10] In this effect, a quantum particle stuck in a potential well has a non-zero probability of spontaneously escaping the well.

ANSWER: quantum **tunneling**

[10] For a particle tunneling out of a finite square well, the particle's wavefunction takes on this mathematical form outside the well.

ANSWER: **exponential decay** [or **decreasing exponential** or **negative exponential**; or **e to the negative x** ; accept **evanescent** wave; prompt on **exponential** or **e to the x** ; prompt on **decay**; do not accept or prompt on "wave"]

<Kalathiveetil, Science - Physics>

13. According to Homer, these figures snatched the daughters of Pandareus away from him and delivered them to the Furies. For 10 points each:

[10] Name these daughters of the ocean nymph Electra and Thaumias. These personifications of storm winds are often depicted as winged female monsters.

ANSWER: **harpies**

[10] The Harpies terrorized this king of Thrace, who was blinded after he misused his prophetic powers. He was encountered and rescued by Jason and the Argonauts.

ANSWER: **Phineus**

[10] In the *Aeneid*, this Harpy prophesies (**PROFF-uh-sighs**) that Aeneas and his shipmates will arrive in Italy but not before they "eat their own tables," which comes true when they later eat the flat loaves of bread on which they had placed fruit.

ANSWER: **Celaeno** (keh-LAY-no)

<Jose, RMP - Greco-Roman Myth>

14. This author's housekeeper Celeste Albaret described his habit of writing while laying in bed in his cork-lined bedroom in a memoir titled for him. For 10 points each:

[10] Name this author, whose extremely long autobiographical novel *Jean Santeuil* (zhawn sawn-TUH-ee) was found in his bedroom after his death. Sections of another of his works titled *The Prisoner*, *The Fugitive*, and *Time Regained* were also published posthumously.

ANSWER: Marcel **Proust** [or Valentin Louis Georges Eugène Marcel **Proust**; accept *Monseieur Proust*]

[10] *Jean Santeuil* begins with the title character being unable to sleep until he receives one of these things from a specific kind of person. Proust's *Swann's Way* also opens with its narrator unable to sleep until he receives one. Give both the desired thing and its source.

ANSWER: a **kiss** from his **mother** [prompt on a **kiss**]

[10] *Swann's Way* and the three aforementioned books are among the seven volumes of this long novel by Proust.

ANSWER: ***In Search of Lost Time*** [or ***Remembrance of Things Past*** or ***A la recherche du temps perdu***]

<Jose, Literature - European>

15. Robert Goldstein, the producer of the silent film *The Spirit of '76*, was prosecuted under this act for depicting the British as the bad guys in the Revolutionary War. For 10 points each:

[10] Identify this 1917 legislation that Daniel Ellsberg was accused of violating for stealing and leaking the Pentagon Papers.

ANSWER: **Espionage Act of 1917**

[10] In the *Schenck* opinion upholding the Espionage Act, Oliver Wendell Holmes, Jr. ruled that the First Amendment doesn't protect one from falsely shouting about one of *these* things "in a theatre and causing panic."

ANSWER: a **fire**

[10] This opponent of conscription was charged with violating the Espionage Act alongside Emma Goldman. He wrote *Prison Memoirs of an Anarchist* after shooting Henry Clay Frick.

ANSWER: Alexander **Berkman** [or Ovsei Osipovich **Berkman**]

<Bentley, History - American>

16. Nikolai Chernyshevsky's novel *What is to be Done?* idealizes this building as a utopia. For 10 points each:
[10] Identify this building that was moved from Hyde Park to a section of London now named after it.
Constructed for an 1851 event, it was destroyed in a fire in 1936.

ANSWER: The **Crystal Palace**

[10] One of the more eccentric inventions demonstrated at the Crystal Palace was the tempest prognosticator, which used these creatures to try to predict storms. These creatures are used in Hirudotherapy.

ANSWER: **leeches** [prompt on **Hirudinea**]

[10] Over 800,000 people paid a penny to use one of these novelties at the Crystal Palace which were installed by George Jennings. Joseph Bramah and Thomas Crapper both developed flush versions of these sanitation devices.

ANSWER: flush **toilet** [or flushing **toilet**; or flush **lavatory**; or **water closet**; or **monkey closet**]

<Jose, Mixed/Other/General Knowledge>

17. Identify the following about parametricism, an architecture style made possible by computer software, for 10 points each.

[10] Patrik Schumacher delivered a "Parametricism Manifesto" while director of a firm named for this architect behind the Guangzhou Opera House, the London Aquatics Center, and the Vitra Fire Station.

ANSWER: Zaha **Hadid** [or Dame Zaha Mohammad **Hadid**]

[10] This architect used software to make the blobs seen in his designs for the Experience Music Project museum and the Guggenheim Bilbao.

ANSWER: Frank **Gehry** [or Frank Owen **Gehry**; or Frank Owen **Goldberg**]

[10] One of the first buildings entirely designed on a computer to be erected was a rooftop restaurant for this building. This Parisian art museum is located next to the Stravinsky Fountain and has escalators and piping on its exterior.

ANSWER: **Centre Georges Pompidou** [or **Pompidou Centre**; prompt on the **Pompidou** museum]

<Bentley, Arts - Architecture>

18. With a subscript 0, this letter denotes the basic reproductive number of a disease, the expected number of people that a single diseased person infects when the disease is rare. For 10 points each:

[10] Name this letter that represents the rate of population growth. It names a type of selection contrasted with K-selection.

ANSWER: **r** [accept **R0** or **R-nought** or **R-zero**]

[10] R-nought can be used to calculate the threshold proportion of the population that needs to be vaccinated to cause this effect. In this effect, the fact that most individuals in a population are immune to a disease protects the remaining individuals.

ANSWER: **herd immunity**

[10] The critical threshold proportion of the population needed to achieve herd immunity is equal to one minus R-nought raised to this power.

ANSWER: **negative one** [or **-1**; accept equivalents such as or **one over** r-nought, or **reciprocal** of r-nought, or **inverse** of r-nought]

<Kothari, Science - Biology>

19. While working in this role, Clare Hollingworth observed camouflage screens facing the Polish border, making the front page of the *Daily Telegraph*. For 10 points each:

[10] Name this role, which Martha Gellhorn performed for *Collier's Weekly* and *The Atlantic Monthly*. In this role, Margaret Bourke-White wrote the article "Women in Lifeboats" about surviving the sinking of the *SS Strathallan*.

ANSWER: **war correspondent** [or **war journalist** or **war photojournalist**; prompt on **foreign correspondent**; prompt on partial answer]

[10] Gellhorn's first assignment as a war correspondent was to cover this conflict. George Orwell recounted six months fighting for the POUM in a memoir set during this war.

ANSWER: **Spanish Civil War**

[10] Gellhorn traveled to Spain with this man, her sometime-husband, though she resented being "a footnote" in his life. This man's experiences during the Spanish Civil War were incorporated into *For Whom the Bell Tolls*.

ANSWER: Ernest Miller **Hemingway**

<Kothari, Literature - American>

20. Identify the following about the career of Braccio da Montone, for 10 points each.

[10] Braccio was one of the most powerful of the men known by this Italian term during the Renaissance. Sir John Hawkwood was one of these leaders of "contract" warriors.

ANSWER: **condottieri** [or **condottiero**; or **condottiere**]

[10] Braccio took pleasure in subjecting people who displeased him to this punishment. One of these actions in Prague kicked off the Thirty Year's War, although Jaroslav Borzita survived by landing in a dung heap.

ANSWER: **defenestration** [or **throwing** people out of a **building**; or **throwing** people from a **bridge**]

[10] Braccio threw three men out of a tower in this town. A saint from this town tried to convert the Egyptian sultan during the Fifth Crusade and founded a religious order with Saint Clare, another resident of this town.

ANSWER: **Assisi** [or Saint Francis of **Assisi**]

<Bentley, History - European>

21. Daniel Libeskind designed the controversial Michael Lee-Chin "Crystal" addition to a museum in this city, which is home to such artistic landmarks as the Royal Alexandra Theatre. For 10 points each:

[10] Name this city home to the Royal Ontario Museum.

ANSWER: **Toronto**

[10] Sonja Bata's personal collection formed the basis for a museum in Toronto dedicated to these objects. Heidegger's "The Origin of the Work of Art" analyzes a Vincent van Gogh painting of two of them.

ANSWER: **shoes** [accept synonyms like **footwear** or **boots**; accept the Bata **Shoe** Museum]

[10] The Toronto-based Canadian Opera Company introduced, and has a trademark on the term for, this practice of projecting translated or transcribed dialogue and lyrics above the stage or on a screen during an opera.

ANSWER: **surtitles** [or **supertitles**; accept word forms like **surtitling**]

<Carson, Arts - Misc>

