

ACF Fall 2017

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Packet by JHU A/UCSD B/Cambridge A/WUSTL A

### Tossups

1. This thinker criticized “[going] to war for an idea” in his work *A Few Words on Non-Intervention*. In another work, he opined that an official is justified in preventing people from crossing a bridge only if it is certain that the bridge will collapse. He once quipped that it was “better to be Socrates dissatisfied than a fool satisfied” while describing different forms of happiness. This thinker concluded that a person should be free to pursue his own interests so long as he does not harm other people, which is known as his harm principle. He also modified and built on the ideas of Jeremy Bentham. For 10 points, name this English thinker, the author of *Utilitarianism* and *On Liberty*.

ANSWER: John Stuart Mill

2. A character in a novel by this author performs a baptism “in the name of the Devil” using blood instead of water. A character in that novel by this author spends a day at the Try Pots Inn by locking himself in his room and praying to his god Yojo. The narrator of a story by this author bribes Mr. Cutlets to ensure the protagonist is well-fed while imprisoned in “The Tombs.” He wrote a story whose title character is employed to help Turkey and Nippers, but soon ceases productive work by repeating “I would prefer not to.” For 10 points, name this American author of “Bartleby the Scrivener,” who depicted the obsessed Captain Ahab in his novel *Moby Dick*.

ANSWER: Herman Melville

3. After the surrender of this war’s losers, a soldier who affixed a flag onto his full rucksack was captured in a photo titled *The Yomper*. During this war, a narrow fjord became known as “Bomb Alley” during the Battle of San Carlos, which paved the way for an amphibious landing at Goose Green. The *HMS Sheffield* was sunk by an Exocet missile strike in this war just two days after hundreds of sailors drowned when the *ARA General Belgrano* sank. Leopoldo Galtieri was removed from power after this war, which bolstered the “Iron Lady” reputation of Margaret Thatcher. For 10 points, name this 1980s war between Britain and Argentina over some South Atlantic islands.

ANSWER: Falklands War

4. This functional group is converted to an alkyl halide using carbon tetrachloride and triphenylphosphine in one reaction. Triphenylphosphine is also used with DEAD [initialise] in a reaction which starts with this functional group, the Mitsunobu reaction. One compound with this functional group is used as a feedstock in the Cativa and Monsanto processes, in which it is carbonylated to form acetic acid. PCC produces carbonyls by oxidising this functional group, the primary type of which is oxidised to a carboxylic acid using Jones’ reagent. This functional group reacts with carboxylic acids to make esters. For 10 points, name this functional group symbolised OH, a simple example of which is ethanol.

ANSWER: alcohol [or hydroxyl; prompt on -OH before it is read]

5. A painting by Magritte depicts one member of this profession smoking his own nose; that work is titled after that profession’s ‘lamp.’ The Venetian noble Taddeo Contarini commissioned a painting depicting three members of this occupation, the youngest of whom is sitting and observing a cave; that work is by Giorgione [“gyor-gee-oh-knee”]. Another member of this profession is seen *Contemplating a Bust of Homer* in a work by Rembrandt. Another person with this occupation was depicted by Jacques-Louis David as pointing into the sky with one arm while reaching for a goblet of hemlock with the other. For 10 points, name this main occupation of the title character of *The Death of Socrates*.

ANSWER: philosophers [or thinkers or other reasonable equivalents; accept artist or painter before “lamp”, as it is sometimes considered a self-portrait]

6. After this ruler's death, the carriage carrying his corpse was accompanied with rotting fish to conceal his death. In an attempt on this ruler's life that almost succeeded, an assassin stabbed at him using a blade hidden inside a tightly furled map. This ruler repressed dissent by burning all non-agriculture and medicine related books and burying hundreds of scholars alive. Li Si, this ruler's chief minister, promoted a strict Legalist philosophy as well as standardization of weights and measures. This ruler's empire quickly fell apart after his death and was replaced by the Han Dynasty. For 10 points, name this ruler, who ended the Warring States period to become the first emperor of China.

ANSWER: **Qin Shi Huangdi** [or **Ying Zheng**; or **Zhao Zheng**; prompt on just **Qin**]

7. In a poem by this author, Files-on-Parade asks "What are the bugles blowing for" and "What makes you so white, so white?" before the Colour-Sergeant replies "They're hanging Danny Deever in the mornin'." This poet romanticized a place "By the old Moulmein pagoda" in a poem whose speaker wishes "Ship me somewheres east of Suez" so he can travel the road to the title location. Another poem by this author advises "If you can keep your head when all about you / are losing theirs .... You'll be a Man, my son!" This author of "Mandalay" and "If" wrote a collection about a boy raised by Indian wolves named Mowgli. For 10 points, name this British author of *The Jungle Book*.

ANSWER: Rudyard **Kipling**

8. Some consider Rima Ariadaeus as evidence of this figure's splitting of the moon. The Green Dome lies above this man's tomb, which has an empty spot reserved for Jesus beside it. This man reached the lote tree at the end of the seventh heaven at the end of an expedition in which he rode the donkey Buraq; that journey is known as the "Night Journey." The teachings and actions of this man are known as sunnah, and stories about his life are collected in the hadith. This man, who received revelations while in a cave on Mt. Hira, had wives such as Khadijah and Aisha. For 10 points, name this man, the final prophet of the religion he founded, Islam.

ANSWER: **Muhammad**

9. When this value is expressed as a complex number, its imaginary part is known as the extinction coefficient. The change in this quantity due to an applied electric field is shown in the Kerr effect. When both the permittivity and permeability of a material are negative, this quantity unusually takes a negative value. Brewster's angle is given by the arctangent of the ratio of this quantity for two different materials. Two values of this quantity are multiplied by the sines of angles in Snell's Law. This quantity is equal to 1.33 in water and 1 in a vacuum. For 10 points, name this dimensionless quantity that is the ratio of the speed of light in a vacuum to that in another material, symbolized  $n$ .

ANSWER: **index of refraction** [or **refractive index**; prompt on **n** before it is read]

10. Richard Russell led a Senate committee investigating whether a major career setback for this man was constitutional. At a conference on Wake Island, this officer shook the president's hand instead of saluting him. Matthew Ridgway replaced this man in his highest post. In his farewell speech to Congress, this man said that "old soldiers never die; they just fade away." This general was shocked at the strength of a Chinese counteroffensive after he pushed his forces near the Yalu River following the success of an amphibious landing at Inchon. For 10 points, name this general who commanded the UN forces in Korea before being sacked by Harry S Truman.

ANSWER: Douglas **MacArthur**

11. Daniel Burnham led a movement in the early 20th-century that advocated beautifying these places in order to instill civic loyalty. Richard Florida argued that these places should cultivate a "creative class" to drive economic development, a theory he now disavows. A Jane Jacobs book that decries segmentation and stagnancy in these places is titled after the death and life of "Great American" ones. Redlining was almost always used to deny services to certain parts of these places. Residents of lower-class and minority areas in these places are priced out of their homes by gentrification. For 10 points, name these population centers such as San Francisco and Chicago.

ANSWER: **cities** [or **metropolises**; or **urban** areas; do not accept or prompt on "towns"]

12. The composer of this work portrayed the stillness along a riverbank at twilight in its adagio movement, which was originally titled “The Wide Spaces of Our Land.” Béla Bartók parodied a theme from this symphony’s first movement in the “Game of Pairs” section of his *Concerto for Orchestra*. That theme is a pastiche of a song from Franz Lehár’s operetta *The Merry Widow*. One section of the first movement repeats its march-like theme twelve times with increasing volume. This symphony’s “invasion” theme represents a Nazi invasion of its composer’s native country. For 10 points, identify this Dmitri Shostakovich symphony named after a Soviet city.

ANSWER: **Leningrad** Symphony [or Dmitri **Shostakovich**’s Symphony No. **7** in C major, Opus 60; or **Shostakovich**’s **7th** Symphony; accept just “Symphony No. **7**” after “Shostakovich” is read]

13. The ESA has launched the Gaia spacecraft in an effort to make a three-dimensional map of this structure. The Curtis-Shapley debate centered on whether or not this system contained “spiral nebulae.” Karl Jansky first discovered strong radio waves coming from this object’s center, but Bell Labs refused to pursue the project further. This structure, which is orbited by the Large and Small Magellanic Clouds, contains the supermassive black hole Sagittarius A\* [“A-star”] at its center. This barred spiral galaxy is found alongside the Triangulum Galaxy and Andromeda in the Local Group. For 10 points, name this galaxy that is home to the Sun.

ANSWER: the **Milky Way** galaxy [or **M24**]

14. In one part of this poem, the protagonist has to climb aboard a creature with the wings of a dragon, the tail of a scorpion, and a face of an honest man in order to scale a cliff. In the first section of this poem, which is set on the night of Maundy Thursday, a panther, a she-wolf, and a lion appear to frighten a character who is “midway upon the journey of” his life. The protagonist of this poem encounters people tossed about by strong winds, including the murdered lovers Paolo and Francesca. Its protagonist is guided through nine circles by Virgil. For 10 points, name this poem which is succeeded by the *Purgatorio* and *Paradiso*, the first part of Dante’s *Divine Comedy*.

ANSWER: Dante’s **Inferno** [prompt on *The Divine Comedy* until mentioned]

15. A stacked stone sculpture called an Inuksuk was used as a symbol for one event in this city. The Lions Gate Bridge crosses the Burrard Inlet to connect this city’s downtown area with its northern suburbs. A famous hiking trail called the Grouse Grind is located just north of this city, which boasts the thousand-acre Stanley Park. A steam-powered clock is the best-known landmark of this city’s historic Gastown district. The ski resort of Whistler-Blackcomb, located eighty miles north of this city, was where most of the competitions of the 2010 Winter Olympics took place, hosted by this city. For 10 points, name this city in British Columbia, the largest city on Canada’s Pacific coast.

ANSWER: **Vancouver**

16. This ruler agreed to a twenty-year truce with Spain in the Truce of Ratisbon ending the War of the Reunions. The Battle of Barfleur was part of a war sparked by this ruler’s territorial ambitions, which were opposed by the League of Augsburg. This ruler’s support of Philip V’s claim to the Spanish throne led to a war during which he was thwarted by an alliance led by the Duke of Marlborough. Despite the efforts of this ruler’s finance minister Jean-Baptiste Colbert, he nearly bankrupted his country with expensive military ventures such as the War of the Spanish Succession. For 10 points, name this French king who reigned for more than seventy years, nicknamed the “Sun King.”

ANSWER: **Louis XIV** of France [or **Louis** the **Great**; or **Louis le Grand**; or the **Sun King** before mentioned; or *le roi soleil* before “the Sun King” is read; prompt on **Louis**]

17. A group of characters from this text built a bridge by throwing stones into the sea, which floated because they had the protagonist’s name carved into them. The main character of this text chased after a golden deer that captivated his lover but was actually a demon in disguise. That lover from this text remained unscathed after a test of fire, demonstrating her chastity. After Kaikeyi exiled this text’s central character for fourteen years, his father, the king of Ayodhya, died of grief. In this text, Hanuman helped locate a victim who was kidnapped by a rakshasa. For 10 points, name this epic that tells of how the title character defeated Ravana and rescued his wife Sita.

ANSWER: the **Ramayana** [or **Ramayanam**]

18. Affilins and affimers are engineered to mimic the function of these proteins. These proteins contain framework regions surrounding their hypervariable regions. Papain [pap-ANE] can cleave these proteins into two Fab fragments and one Fc fragment. These proteins' varying affinities are caused by somatic hypermutation. In a Western blot, both primary and secondary types of these proteins are used to tag the protein of interest. These proteins, which can be produced monoclonally or polyclonally from B cells, are Y-shaped molecules made of two light chains and two heavy chains. For 10 points, name these proteins that bind to antigens as part of the immune system response.

ANSWER: **antibodies** [or **antibody**; or **immunoglobulins**; or **Abs**; or **Igs**]

19. A character in this novel physically skips from side to side whilst delivering convoluted explanations, and is said to be able to turn black into white. A song in this novel sounds like a combination of "La Cucaracha" and "Oh My Darling, Clementine," and is introduced by a character who dies three days after outlining the Seven Commandments. A character in this novel constantly answers problems by replying "I will work harder," before he injures his leg and is sold off to a glue factory. After this novel's Battle of the Cowshed, Snowball is driven out on the orders of his fellow pig Napoleon. For 10 points, name this allegorical novella about the Russian Revolution written by George Orwell.

ANSWER: **Animal Farm**, *A Fairy Story*

20. In this musical, Elsa's fiancée realizes her political apathy and breaks off their engagement after the song "No Way to Stop It." The composer of this musical wrote the songs "I Have Confidence" and "Something Good" for its film adaptation. During a thunderstorm, the main character sings of "brown paper packages tied up with strings" in a song that John Coltrane riffed on in a 1961 album. Christopher Plummer and Julie Andrews star in the film adaptation of this musical, which features the song "My Favorite Things." For 10 points, name this Rodgers and Hammerstein musical in which the governess Maria teaches Captain von Trapp's children to sing.

ANSWER: *The **Sound of Music***

Tiebreaker. Ghost towns in this desert include Kelso, formerly known as "the town without television," and the abandoned silver mining town Calico. The name of this desert is derived from the endonym of a native tribe which means "beside the water." The Tehachapi and San Gabriel Mountains bound the Western tip of this desert, comprising the Antelope Valley. A namesake river flows into this desert from the San Bernardino mountains to the south, and the Joshua Tree is endemic to this desert. For 10 points, name this driest desert of North America, lying in southern Nevada and California, in which Las Vegas and Death Valley are located.

ANSWER: **Mojave** Desert

## Bonuses

1. The father of chemist Josiah Willard Gibbs found a Mende translator for this trial by going to wharves and counting from one to ten in Mende until someone understood him. For 10 points each:

[10] Name this 1841 case which ruled that enslaved Africans who had taken over a Spanish slave ship were free and innocent.

ANSWER: *United States v. the Amistad*

[10] This president was in office during the *Amistad* case as well as during the Panic of 1837. This vice-president under Andrew Jackson was often called “Old Kinderhook” by his supporters.

ANSWER: Martin Van Buren

[10] This so-called war, fought during Van Buren’s presidency, was resolved by the Webster-Ashburton Treaty and was fought over a border conflict in Maine.

ANSWER: Aroostook War [or Pork and Beans War]

2. This scientist names an equation that comes in time-independent and time-dependent forms. For 10 points each:

[10] Name this Austrian physicist, whose wave equation in quantum mechanics which states that “H psi equals E times psi.” This scientist also famously proposed a thought experiment involving a cat.

ANSWER: Erwin Schrödinger

[10] The “H” in the Schrödinger equation refers to this quantum operator. Classically, this quantity is the sum of the kinetic and potential energies of an object and is denoted by an H.

ANSWER: Hamiltonian operator

[10] The most common form of the time-independent Schrödinger equation includes h bar squared over 2 m, times this operator applied to psi. This operator is defined as the divergence of the gradient of a function.

ANSWER: Laplacian operator [or Laplace operator; prompt on "del squared" or "delta"]

3. A 1990 book on this concept argues that it is not a state of being, but rather a process of repeatedly doing. For 10 points each:

[10] Name this concept, the social construction of masculine and feminine characteristics, distinct from biological sex.

ANSWER: gender

[10] This theorist described gender as “performative” in her 1990 book *Gender Trouble*.

ANSWER: Judith Butler

[10] Butler is generally considered to be a member of this feminist movement that started in the early 1990s. This movement incorporates intersectionality and has less of an explicitly political focus than prior feminist movements.

ANSWER: third-wave feminism

4. A Giambologna (jahm-bo-LOW-nia) sculpture of this event shows three intertwined marble figures, the uppermost of which reaches plaintively into the air. For 10 points each:

[10] Name this event that occurred shortly after the founding of Rome. Nicolas Poussin made two paintings of this event that show Romulus in the upper left signaling his men to perpetrate it.

ANSWER: the Abduction of the Sabine Women [or Rape of the Sabine Women; both underlined parts required in either answer; do not accept answers with “intervention” in place of “abduction”]

[10] Giambologna also sculpted this Roman god standing on the tip of one foot. The Greek equivalent of this god carries an infant Dionysus in a Praxiteles sculpture.

ANSWER: Mercury [or Hermes]

[10] Giambologna created his statue of Mercury with this material. Donatello created his sculpture of *David* using this alloy.

ANSWER: bronze

5. This character falls asleep at the reins of her family's horse, causing its death in an accident with a station wagon. For 10 points each:

[10] Name this character, a milkmaid who kills her aristocratic lover Alec after she is abandoned by her husband Angel Clare. She is eventually arrested by the police at Stonehenge.

ANSWER: **Tess** Durbeyfield [or **Tess of the d'Urbervilles**]

[10] *Tess of the d'Urbervilles* was written by this English author, who set novels such as *Far From the Madding Crowd* in the fictional county of Wessex.

ANSWER: Thomas **Hardy**

[10] This other Hardy novel set in Wessex features Michael Henchard as the title civic official, who auctions off his family to a sailor for five guineas before being usurped by Donald Farfrae.

ANSWER: *The **Mayor of Casterbridge***

6. The master theorem analyzes the use of this strategy in divide-and-conquer algorithms. For 10 points each:

[10] Name this strategy in computer science, in which a function calls itself until it reaches a base case.

ANSWER: **recursion** [or **recursive** programming]

[10] In this type of recursion, the function is not called upon by name. More generally, this word describes functions without a name, which can be created in some languages using lambda expressions.

ANSWER: **anonymous** recursion [or **anonymous** functions]

[10] Recursion is useful when designing algorithms that generate these self-similar geometric figures. Examples of these figures include the Sierpinski carpet and the Mandelbrot set.

ANSWER: **fractals**

7. This kingdom was annexed into the German Empire in 1871. For 10 points each:

[10] Name this Catholic kingdom ruled by the House of Wittelsbachs from Munich.

ANSWER: Kingdom of **Bavaria** [or Königreich **Bayern**]

[10] This Bavarian king, known for his insanity, ordered the construction of Neuschwanstein Castle, which was the inspiration for Disneyland's Sleeping Beauty Castle.

ANSWER: **Ludwig II** [or **Mad King Ludwig**; prompt on **Ludwig**]

[10] The Bavarian Soviet Republic was a short-lived attempt at socialism in Bavaria that occurred shortly after this conflict was ended. Germany was forced to reorganize into the Weimar Republic after this war.

ANSWER: **World War I** [or **WWI**; or the **Great War**]

8. The title scientist in this story shows his guests a demonstration in which a withered, 55-year-old flower is made to bloom again. For 10 points each:

[10] Name this story in which those old guests are temporarily restored by water from the Fountain of Youth before accidentally smashing the vase containing it.

ANSWER: "**Dr. Heidegger's Experiment**"

[10] In this story by the author of "Dr. Heidegger's Experiment," the title character has a vision in the woods of a witches' sabbath, causing him to shun his wife Faith and the people of his town.

ANSWER: "**Young Goodman Brown**"

[10] "Dr. Heidegger's Experiment" and "Young Goodman Brown" were written by this American author of *The Scarlet Letter*.

ANSWER: Nathaniel **Hawthorne**

9. While out fishing, Hymir caught several whales while this god snagged his long-time rival, the Midgard Serpent. For 10 points each:

[10] Name this hammer-wielding Norse god of thunder.

ANSWER: **Thor**

[10] Thor's hammer Mjolnir could resurrect two of these animals, which pulled Thor's chariot, after they were eaten. The Greek god Pan had the lower body of this animal.

ANSWER: **goats**

[10] The Völuspá (WO-lus-pah) foretells that after being poisoned by the Midgard Serpent during Ragnarok, Thor will walk this number of steps before collapsing. A Greek group of this many figures, including Clio and Terpsichore, were the daughters of Mnemosyne ["nih-maw-zih-nee"].

ANSWER: **nine**

10. This group's only female member, Germaine Tailleferre (tie-FAIR), contributed a piano piece named *Pastorale, Enjoué* (on-zhoo-AY) to its first collaboration. For 10 points each:

[10] Name this group of French composers that also included the composer of the train-inspired work *Pacific 231*, Arthur Honegger (oh-ne-ZHAY).

ANSWER: Les **Six** [or The **Six**]

[10] Tailleferre's *Pastorale, Enjoué* was dedicated to this other member of Les Six, who composed the ballets *The Ox on the Roof* and *The Creation of the World*.

ANSWER: Darius **Milhaud** (mee-YO)

[10] One of Tailleferre's best-known works is a concertino for this string instrument. This instrument plays a long cadenza in the *Waltz of the Flowers* from *The Nutcracker* and has 47 vertical strings that are plucked by hand.

ANSWER: **harp**

11. This protein contains an iron atom held in a heterocyclic porphyrin ring. For 10 points each:

[10] Name this protein that is responsible for carrying oxygen in red blood cells. This protein gives blood its distinctive red color.

ANSWER: **hemoglobin**

[10] When hemoglobin binds to oxygen, it undergoes a conformational change that increases its affinity for oxygen, an example of this type of binding. The degree of this behavior is described by the Hill equation.

ANSWER: **cooperative** binding [or **cooperativity**; prompt on **allostery** or **allosteric** regulation]

[10] Although hemoglobin generally binds to oxygen, it binds to this lethal gas around 200 times more readily, leading to the formation of carboxyhemoglobin.

ANSWER: **carbon monoxide** [or **CO**]

12. A Muslim empire located mostly in this modern-day country was started by a jihad started by Usman dan Fodio and continued by his son Muhammad Bello. For 10 points each:

[10] Name this modern-day country home to many differing ethnic groups like the mostly-Muslim Hausa and Fulani in its north and the mostly-Christian Yoruba and Igbo in its south.

ANSWER: **Nigeria**

[10] Nigeria's borders are a colonial creation, drawn by this empire which ruled Nigeria from Lagos. Its other African colonies included modern-day Ghana and Kenya.

ANSWER: **British** Empire [or **Britain**; or **United Kingdom**; anti-prompt on **England**]

[10] Britain ruled Nigeria through existing local rulers, such as *emirs* in northern Nigeria, in this form of colonial rule. In this system, natives were allowed in the bureaucracy but the highest posts were still dominated by Europeans.

ANSWER: **indirect** rule

13. The third section of this book examines *conatus*, the will of everything to exist and preserve itself. For 10 points each:

[10] Name this book whose style is modeled on that of Euclid's *Elements*. This philosophical work affirms its author's pantheism by equating God with Nature.

ANSWER: **Ethics, Demonstrated in Geometrical Order**

[10] *Ethics* was written by this Jewish philosopher from the Netherlands. He was expelled from the Jewish community of Amsterdam due to his controversial theological views.

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

[10] According to Spinoza, these events are just natural occurrences, of which humans are ignorant of the cause. David Hume, on the other hand, argued that these events were "transgressions" of the laws of nature.

ANSWER: **miracles**

14. Answer the following about Hearthstone, an online collectible card game based on the Warcraft universe. For 10 points each:

[10] Hearthstone was created by this gaming company, whose other games include the Starcraft and Diablo series.

ANSWER: **Blizzard** Entertainment

[10] In Hearthstone's Mean Streets of Gadgetzan expansion, just about everyone played this adorable, hyper-aggressive pirate. He is literally shot out of a cannon onto the battlefield, and is named for an item of clothing.

ANSWER: **Patches** the Pirate

[10] While playing this class in Hearthstone, be sure to irritate your opponent by emoting "Well met!" Throughout several Blizzard games, members of this class include Tirion Fordring and Uther Lightbringer.

ANSWER: **Paladins**

15. Answer the following about the winner of the 2006 Nobel Prize in Literature, Orhan Pamuk, for 10 points each.

[10] This 1998 novel by Pamuk discusses the lives of several artists who specialize in painting miniature figures and begins with the murder of Elegant Effendi.

ANSWER: **My Name is Red**

[10] Pamuk and Erdağ Gökner (er-DIE GOKE-nar) won the IMPAC prize for a version of *My Name is Red* in this language. Robert Fagles produced versions of the *Odyssey* and *Iliad* in this language.

ANSWER: **English** translation

[10] Orhan Pamuk is from this modern-day country, along with other novelists such as Elif Şafak and Yaşar Kemal.

ANSWER: Republic of **Turkey** [or **Türkiye** Cumhuriyeti]

16. A two-dimensional form of this spectroscopic technique uses the Nuclear Overhauser Effect to establish which atoms are physically close to one another. For 10 points each:

[10] Name this spectroscopic technique, which uses a magnetic field to investigate the environment of atoms in a compound.

ANSWER: **NMR** [or **n**nuclear **m**magnetic **r**esonance spectroscopy; or specific forms of NMR such as 1-H **NMR** or 13-C **NMR** or proton **NMR** or carbon **NMR**; prompt on **MRI** or **magnetic resonance imaging**]

[10] The chemical shift of an NMR peak relative to a reference is most commonly expressed in these units, equal to the mass fraction times  $10^6$  ["ten to the sixth"]. Gloveboxes are termed "oxygen-free" if the amount of oxygen present is less than 10 of this unit.

ANSWER: **parts-per-million** [or **ppm**]

[10] A deuterated form of this molecule is the most common solvent used in NMR spectroscopy. Contamination of the non-deuterated form of this molecule gives a characteristic singlet peak at 7.26 ppm in proton NMR.

ANSWER: deuterated **chloroform** [or **CHCl<sub>3</sub>** or **CDCl<sub>3</sub>**]

17. A woodcut by this artist depicted a rhinoceros imported into Lisbon, which was the first living example seen in Europe since Roman times. For 10 points each:

[10] Name this German Renaissance artist and printmaker from Nuremberg, whose engravings include *Melencolia I*.

ANSWER: Albrecht **Dürer**

[10] Some of the symbols in Dürer's *Melencolia I* include this geometric figure next to an hourglass, the bottom row of which includes the date of the painting, 1514.

ANSWER: **magic square** [prompt on **square**]

[10] Another Dürer engraving features a knight on horseback flanked by a goat-headed devil and a personification of this figure, astride a pale horse and holding an hourglass to represent the shortness of life.

ANSWER: **Death** [or the **Grim Reaper**; or other reasonable equivalents]

18. Important texts in this religion include the *Book of Certitude* and *The Dawn-Breakers*. For 10 points each:

[10] Identify this religion that believes in progressive revelation, and whose founder Bahá'u'lláh [BA-ha-U-la] claimed to be the most recent of divine messengers including the Buddha, Zoroaster, Jesus, and Muhammad.

ANSWER: **Bahá'í** Faith

[10] The main governing body of the Bahá'í Faith is the Universal House of Justice, located in the city of Haifa in this Middle East country. This country contains the Shrine of the Báb on Mount Carmel.

ANSWER: **Israel**

[10] This man was appointed by `Abdu'l-Bahá to be the Guardian of the Bahá'í Faith from 1921 until his death in 1957. He helped form many Spiritual Assemblies and increased worldwide Bahá'í membership to over 400,000.

ANSWER: **Shoghi** Effendi Rabbání [prompt on "Effendi"]

19. This country ran internment camps such as New Denver and Tashme. For 10 points each:

[10] Identify this country which forcibly relocated its Japanese population to remote internment camps in its interior, similar to its southern neighbor. It was led during World War II by William Lyon Mackenzie King.

ANSWER: **Canada**

[10] Canadian forces joined with British forces in defending this British colony, which fell to Japanese forces on Christmas 1941. In 1898, the British expanded this colony by leasing the New Territories for 99 years.

ANSWER: **Hong Kong** [or **Xianggang**]

[10] Canadians formed the majority of the force which attacked this French port city in 1942. While the attack failed miserably, it gave the Allies valuable experience for the later Normandy landings.

ANSWER: **Dieppe**

20. A poet from this movement assigned a color to each vowel in the first line of his *Sonnet des Voyelles*. For 10 points each:

[10] Name this literary movement. Two of its members wrote the long poem *A Season in Hell* and the lyric poem "The Afternoon of a Faun."

ANSWER: **Symbolism** [or word forms like **Symbolists**]

[10] Arthur Rimbaud wrote his *Sonnet des Voyelles* in this language, which Alexandre Dumas also used to write *The Count of Monte Cristo*.

ANSWER: **French** [or **français**]

[10] This other French Symbolist published many of his own sonnets in the "Spleen and Ideal" section of his most famous poetry collection, which also includes his poems "To The Reader" and "The Albatross."

ANSWER: Charles **Baudelaire**