

early autumn collegiate novice tournament

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huma zafar | brice russ | charlie rosenthal | sandy huang | idrees kahloon | tanay kothari | andrew hart

packet 7 tossups

1. This ruler's grave is marked by a large hilltop cross in the "Valley of the Fallen." He gained military experience at the Battle of Alhucema during the Rif Wars. He responded to the communist-backed "Red Terror" by initiating the "White Terror," which lasted into his reign. His supporters consisted of conservative Carlists and followers of José Antonio Primo de Rivera's Falange (fah-LON-hay) Party. He was succeeded by the democratizing King Juan Carlos I. For 10 points, name this fascist Generalísimo who ruled from 1939 to '75 after winning the Spanish Civil War.
ANSWER: Francisco **Franco** y Bahamonde [or Francisco Paulino Hermenegildo Teódulo **Franco** y Bahamonde Salgado Pardo de Andrade]
2. This man distinguished between physical, social, and logical-mathematical knowledge in his theory of genetic epistemology. This psychologist performed an experiment involving tall and short beakers, which demonstrated the concept of conservation. He postulated that adaptation occurs through accommodation and assimilation of knowledge into internal schemas. He theorized periods characterized by magical thinking and object permanence. For 10 points, name this Swiss psychologist who posited the sensorimotor and preoperational stages of development in children.
ANSWER: Jean **Piaget**
3. If you multiply two of these values and find the Euler totient function of the product, you can create public and private keys symbolized d and e . Whether a given number is one of these values is tested using an algorithm named for Miller and Rabin. One naïve test for these values, named for Fermat, gives false positives called Carmichael numbers. The difficulty of factoring composite numbers composed of two of these numbers is the basis of RSA encryption. For 10 points, name these non-composite numbers with only two divisors, one and themselves.
ANSWER: **prime** numbers [or **primes**]
4. At the end of the novel in which he appears, this character fights off wolves while crossing the Pyrenees with the wealth from his Brazilian plantation. He is portrayed as a compulsive terrace-builder in a 1986 novel. This character calls an island at the mouth of the Orinoco "Despair." He fights cannibals to free a man whom he teaches English and converts to Christianity. This character takes supplies from a sinking ship to help him survive after his companions die in a storm. For 10 points, name this companion of Friday, a marooned sailor who titles a novel by Daniel Defoe.
ANSWER: **Robinson Crusoe** [accept either underlined part]
5. In a parody of one song by this artist, Weird Al sings that he will pull someone's insides out to "see what he ate" and claims to have "your kidneys" on his mind. This singer notes that she is "in trouble deep" in the chorus of her song "Papa Don't Preach." This artist described "dancing...like a dream, no end and no beginning" on her song "Like a Prayer." She claimed that she "made it through the wilderness" in a song in which she compares herself to the title figure, "touched for the very first time." For 10 points, name this pop star who sang "Like a Virgin."
ANSWER: **Madonna** [or Madonna Louise **Ciccone**]

6. One rite in this faith consists of removing the *kushti* girdle string while washing one's hands. Modern-day adherents of this faith initiate seven-year-olds in the *Navjote* ceremony, during which the children receive white wool shirts. Indians known as Parsees practice this religion, whose funeral rites dictate building towers of silence to house corpses. The Devas and Amesha Spentas are evil and good spirits in this religion, which centers on a conflict between Angra Mainyu and Ahura Mazda. For 10 points, name this dualistic Iranian religion whose holy text is the *Avesta*.
ANSWER: **Zoroastrianism** [or **Zarathustranism**; or **Mazdaism** before read; prompt on **Parsee** before read]
7. This man's only extant wooden sculpture is a crucifix found at the Santo Spirito, at whose hospital this artist studied corpses. He sculpted the *Dying Slave* and *Rebellious Slave* for a room that also contains a horned depiction of Moses. Speculation that Solari was the actual sculptor inspired this man to carve his name on a sash in one of his works. This sculptor who worked on Julius II's tomb also made a seventeen-foot tall depiction of a naked man with his left hand near his chin. For 10 points, name this Italian artist who sculpted several *Pietàs* and a marble *David*.
ANSWER: **Michelangelo** di Lodovico **Buonarroti** Simoni [accept either underlined name]
8. This poet describes a tuna as a "bullet / from the ocean depths" in one of his *Elemental Odes*, which praise common things. This author wrote an anguished poem in which he laments "in you everything sank." In another poem, he claims "tonight I can write the saddest lines." This student of Gabriela Mistral wrote another work whose fifteen sections include "The Conquistadors" and "The Heights of Macchu Picchu." For 10 points, name this Marxist who wrote *Canto General* and *Twenty Love Poems and a Song of Despair*, a Nobel-winning Chilean poet.
ANSWER: Pablo **Neruda** [or Juan Ricardo **Reyes** Basoalto]
9. One type of these groups, which was theorized by Robert Paine, is defined by a large environmental impact for its body mass. One way in which new ones are generated was theorized by Ernst Mayr in a book about "Systematics" and the origin of these groups, which Dobzhansky defined genetically. They are created in peripatric, allopatric, and sympatric processes. In the Linnean scheme, this term makes up the second half of binomial nomenclature, after the genus. For 10 points, name this lowest-level biological taxon, the "Origin" of which was investigated by Darwin.
ANSWER: **species** [or word forms like **speciation**]
10. In one story, this man slays a rape-happy giant on the island of Mont Saint Michel before defeating Emperor Lucius. This man was mortally wounded at a clash that began when a soldier killed an asp with his sword, the Battle of Camlann. He is conceived when his father sleeps with Igraine while disguised as Gorlois. After his fight with Mordred, this figure goes to Avalon to heal his wounds. This son of Uther Pendragon is married to Guinevere and employs Lancelot. For 10 points, name this man who pulled Excalibur from a stone and ruled from Camelot.
ANSWER: King **Arthur**
11. This ruler forced the Knights Hospitalier to move from Rhodes to Malta during a naval campaign. He had his son Mustafa strangled at the behest of his wife Roxelana, whom he broke the rules of succession to marry. He elevated his servant Ibrahim to the position of Grand Vizier. This supporter of John Zápolya besieged Belgrade and defeated Hungarian King Louis II at the battle of Mohács. This ruler's inroads into Europe were halted at the 1529 siege of Vienna. For 10 points, name this son of Selim the Grim, a "Magnificent" Ottoman sultan.
ANSWER: **Suleiman** the Magnificent [or **Suleiman** I; or **Suleiman** the Lawgiver; or **Suleiman** Kanuni]

12. This novel's protagonist joins up with the revolutionaries Brother Hambro and Tod Clifton. A boiler room explosion in this novel is partly the fault of Lucius Brockway, the protagonist's co-worker at the Liberty Paints factory. Its protagonist is expelled from Dr. Bledsoe's college, to which he had won a scholarship based on a speech he recites in this novel's first chapter, "Battle Royal." Its narrator meets Ras the Exhorter, a leader of the Brotherhood, a Black Nationalist group. For 10 points, name this novel about a marginalized, nameless black male, by Ralph Ellison.
ANSWER: ***Invisible Man*** [do not accept "The Invisible Man"]
13. This thinker formulated the method of residues to go along with Avicenna's methods of agreement, difference, and concomitant variation. He may have collaborated with his wife, Harriet Taylor, on a work that argued for female suffrage. Another work by this author opposes the "tyranny of the majority" and is the first appearance of his "Harm Principle." This author of *A System of Logic* and "The Subjection of Women" wrote another work that supports a philosophy developed by Jeremy Bentham. For 10 points, name this author of *On Liberty* and *Utilitarianism*.
ANSWER: John Stuart [J.S.] **Mill**
14. This man names five rules for determining the structure of complex ionic crystals. He mistakenly assumed that phosphate groups are neutral in his theory that DNA has a triple-helical structure. With Corey and Branson, this man proposed that alpha helices and beta sheets make up the secondary structure of proteins. This scientist created a scale that ranges from zero point seven to four to measure electronegativity, a concept he created. For 10 points, name this author of *The Nature of the Chemical Bond*, an American chemist who won Nobels in both Chemistry and Peace.
ANSWER: Linus Carl **Pauling**
15. This composer opened the fourth movement of his second minor-key symphony with a Mannheim Rocket. This composer of the *Great G-minor Symphony* wrote a well-loved C-minor *Piano Concerto No. 24* and an A-major *Clarinet Concerto*. His wife Constanze lobbied Franz Süssmayer to complete this composer's *Requiem*. He composed the *Prague* and *Jupiter* symphonies, which are found in the Koechel catalog of his works. For 10 points, name this composer who wrote *Eine Kleine Nachtmusik* and variations on the melody that became *Twinkle, Twinkle, Little Star*.
ANSWER: Wolfgang Amadeus **Mozart**
16. This man's slave, Charlotte Dupuy, sued for her independence nearly two decades before Dred Scott. This politician's Annual Message of 1815 contained the Seven Points of his high-tariff plan to fund internal development. As Secretary of State, this man dueled with John Randolph over the accusation that he supported John Quincy Adams for political gain in the so-called "Corrupt Bargain." He brokered an agreement that allowed Maine to enter the Union as a free state. For 10 points, name this longtime Congressman from Kentucky, a Whig known as "The Great Compromiser."
ANSWER: Henry **Clay** Sr.
17. In one episode from this work, a friar shows the people coals instead of a feather from Gabriel. One man in this work beats his wife into submission after Solomon tells him to go to the Bridge of Geese. Dineo narrates the final part of this work, in which the Marquis of Saluzzo marries the patient Griselda. A group of characters, including Pamfilo and Filistrato, initiate this work's narrative by gathering at the basilica of Santa Maria Novella and fleeing the Black Death in Florence. For 10 points, name this collection of one hundred stories related by Boccaccio.
ANSWER: *The **Decameron**: Prencipe Galeotto*

18. This property's emergence can be modeled by a second-order phase transition with an order parameter proportional to the attractive potential between electrons. This property, which has characteristic lengths called the penetration depth and coherence length, can be understood as the condensation of Cooper pairs. Some materials with this property are perfect diamagnets that expel internal magnetic fields via the Meissner effect. BCS theory models Type I materials with this property. For 10 points, name this property in which materials have zero electrical resistance.

ANSWER: **superconductivity** [or **superconductors**]

19. This ruler faced a scandal when Amy Robsart, the wife of Robert Dudley, died by falling down some stairs. This ruler was dubbed a "servant of crime" and excommunicated in the papal bull *Regnans in Excelsis*, a response to the passage of the Second Act of Supremacy. Anthony Babington's plan to assassinate this ruler was uncovered by spymaster Francis Walsingham. This ruler ordered the execution of Mary, Queen of Scots and sent Francis Drake to defeat the Spanish Armada. For 10 points, name this Tudor monarch, the "Virgin Queen" of England.

ANSWER: Queen **Elizabeth I** [prompt on Queen **Elizabeth**]

20. This artist showed a man leading a horse-drawn wagon in his *Going West*, which was in his early, Native-American-inspired style. Eight vertical lines streak across a colorful background in a painting by this artist that was purchased for an exorbitant sum by the Australian government. This artist of *Blue Poles* and *Number 5* was inspired by *The Tempest* to paint *Full Fathom Five*. A purple hue hangs over black lines in his *Lavender Mist*, which is exemplary of his action painting technique. For 10 points, name this abstract expressionist known as "the Dripper."

ANSWER: Paul Jackson **Pollock**

tiebreakers

21. This author wrote a novel set at Otsego Lake in which the title character rescues the hapless scalpers Hurry Harry and Tom Hutter. One of this author's title characters is the disguised John Paul Jones. Duncan Heyward is dressed as a clown in another work by this author, in which Cora Munro is stabbed in the chest. Magua kills Uncas, the son of Chingachgook, before plummeting to his death after being shot by Natty Bumppo in this author's *The Last of the Mohicans*. For 10 points, name this early American novelist who wrote the *Leatherstocking Tales*.

ANSWER: James Fenimore **Cooper**

22. One of this empire's rulers, Tiglath-Pileser, conquered the area bordering the Mediterranean Sea. Shalmaneser III built a Great Ziggurat in this empire, which fell after it was sacked by the Chaldeans. One king of this empire had a massive collection of cuneiform tablets. This empire, which housed the Library of Ashurbanipal, was also ruled by Sargon II and Sennacherib. For 10 points, name this Mesopotamian empire with a capital at Nineveh, named for the fact that it was based around the city of Ashur.

ANSWER: **Assyria**

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packet 7 bonuses

1. Recurring characters in this opera cycle include the dragon Fafnir and the hero Siegfried. For 10 points each:
[10] Name this cycle of four operas that begins when Alberich steals the title object and ends with the destruction of Valhalla. Operas in it include *The Valkyrie* and *The Twilight of the Gods*.
ANSWER: the **Ring Cycle** [or *The **Ring of the Nibelung***; or *Der **Ring des Nibelungen***]
[10] *The Ring Cycle* was composed by this German, who also wrote the operas *Tannheuser* and *Lohengrin*.
ANSWER: Wilhelm Richard **Wagner**
[10] In this first opera of *The Ring of the Nibelung*, Alberich is tricked by the gods, who use the ring to pay off a debt to the giants Fafnir and Fasolt.
ANSWER: *Das **Rhinegold*** [or *The **Rhine Gold***]
2. This phenomenon can be demonstrated by placing two speakers a few yards apart, then walking around a room and observing where the sound is louder and quieter. For 10 points each:
[10] Name this phenomenon by which coherent waves generate a new wave pattern upon coming into contact.
ANSWER: **interference**
[10] In this type of interference, a crest of one wave meets a trough of another, causing a net amplitude decrease.
ANSWER: **destructive** interference
[10] This principle states you must add the magnitudes of the waves to combine them. Its “quantum” form occurs when an object exists in multiple quantum states, like Schrödinger’s cat, which is both alive and dead.
ANSWER: principle of **superposition** [or quantum **superposition**]
3. This city is home to a funicular railway that ascends the Castle Hill. For 10 points each:
[10] Name this Hungarian city that also houses the Matthias Church and Gellert Hill. It was once two separate cities on opposite banks of a river.
ANSWER: **Budapest**
[10] Budapest used to be two cities, Buda and Pest, which were separated by this second-longest European river.
ANSWER: the **Danube** [or **Duna**; or **Donau**; or **Dunaj**; or **Dunav**]
[10] This other city along the Danube is the only national capital to border two independent countries. It is the former capital of the Kingdom of Hungary and current capital of Slovakia.
ANSWER: **Bratislava** [or **Pressburg**; or **Pozsony**]

4. This author wrote a “story of Wall Street” in which the title character would “prefer not to.” For 10 points each:
[10] Name this man, whose “Bartleby the Scrivener” is collected in his *Piazza Tales*.
ANSWER: Herman **Melville**
[10] Herman Melville wrote this novel in which Ahab pursues a white whale.
ANSWER: **Moby-Dick**
[10] This Melville novel tells the story of the title foretopman, who is wrongly accused of conspiring to mutiny and is then sentenced to death by Captain Vere for the murder of Claggart.
ANSWER: **Billy Budd**, *Foretopman* [or **Billy Budd**, *Sailor (An Inside Narrative)*]
5. Name the following about the duck-billed platypus, for 10 points each.
[10] Platypuses have five pairs of these entities directly related to sex. They are visualized in karyotypes, and humans have twenty-three pairs of them.
ANSWER: **chromosomes**
[10] The duck-billed platypus, along with the echidna, is conventionally in this order of mammals that excrete, reproduce, and lay eggs from a single opening called the cloaca.
ANSWER: **monotremes** [or **monotremata**]
[10] Like all vertebrate embryos, platypus embryos contain this rod-shaped elastic body, which is something of a primitive backbone. In most vertebrates, the vertebral column replaces this structure during development.
ANSWER: the **notochord**
6. This father of Arjuna received sacrifices of the ritual drink soma. For 10 points each:
[10] Name this heroic god of the *Rigveda* who slew the dragon Vritra.
ANSWER: Shri **Indra**
[10] Indra wields one of these objects named Vajra as his weapon. In Greek myth, three Cyclopes forged these objects for Zeus, who used them to strike down mortals like Asclepius.
ANSWER: **thunderbolt** [or **lightningbolt**; prompt on **bolt**; do not accept “thunder”]
[10] Indra also liberated these animals from the Vala cave, where they were held by demons. In modern Hinduism, these animals hold an exalted status and are not slaughtered.
ANSWER: **cows** [or **cattle**; accept equivalents]
7. This ruler survived a bout of bubonic plague in 542 CE, and his general Belisarius reconquered much of Italy. For 10 points each:
[10] Name this husband of Theodora, a “great” Byzantine emperor.
ANSWER: **Justinian** the Great [or **Justinian I**]
[10] Justinian ordered Tribonian to oversee the creation of one of these exhaustive registries. Hammurabi oversaw the creation of an ancient Mesopotamian one.
ANSWER: a legal **code** [or **codex**; or **Corpus Juris Civilis**; accept reasonable equivalents involving **laws**]
[10] Justinian violently put down the Nika riots, which began over chariot-racing hooliganism in this Constantinople landmark next to Justinian’s palace.
ANSWER: the **Hippodrome** [or **Sultanahmet Meydani**; or **Sultan Ahmet Square**]

8. This artist painted a man looking at a gramophone near a dead woman in *The Menaced Assassin*. For 10 points each:
[10] Name this Belgian surrealist painter of *Golconda* and *The Human Condition*, who showed a train emerging from a fireplace in *Time Transfixed*.
ANSWER: René François Ghislan **Magritte**
[10] Magritte's *The Treachery of Images* shows a picture of this item, with a caption declaring that the image is not actually this item.
ANSWER: a **pipe** [or "this is not a **pipe**"; or "ceci n'est pas une **pipe**"]
[10] The title figure of Magritte's *Son of Man* has his face obscured by one of these fruits, which Cezanne painted spilling from a basket.
ANSWER: a green **apple**
9. The protagonist of this short novella supports his sister Grete, who plays the violin. For 10 points each:
[10] Name this work in which Gregor Samsa wakes up to discover that he has become a giant insect.
ANSWER: *The **Metamorphosis*** [or *Die **Verwandlung***]
[10] This author of *The Metamorphosis* also wrote the story "In the Penal Colony," in which an elaborate torture device etches words on the bodies of the condemned before killing them.
ANSWER: Franz **Kafka**
[10] Frau Grubach is the protagonist's landlady in this Kafka work, in which Josef K. is arrested and put through the title proceedings.
ANSWER: *The **Trial*** [or *Der **Prozess***]
10. Bob LaFollette oversaw the Senate Committee that initially investigated this scandal. For 10 points each:
[10] Name this early 1920s scandal in which Secretary of the Interior Albert Fall took bribes for selling the namesake Wyoming oil reserves.
ANSWER: **Teapot Dome** scandal [prompt on partial answer]
[10] The Teapot Dome scandal occurred during the administration of this president, who also oversaw the Washington Naval Conference and appointed William Howard Taft to the Supreme Court before dying in office.
ANSWER: Warren Gamaliel **Harding**
[10] Harding and Taft were two of seven presidents to hail from this Midwestern state, also home to political boss Mark Hanna.
ANSWER: **Ohio**
11. Thirteen epistles in the New Testament are attributed to this man. For 10 points each:
[10] Name this apostle to the Gentiles who was converted to Christianity on the road to Damascus.
ANSWER: Saint **Paul** of Tarsus [prompt on **Saul**]
[10] This other apostle feuded with Paul at Antioch over the issue of whether Gentile Christians had to follow Jewish law. This first pope is the "rock" upon which Christ built the church.
ANSWER: Simon **Peter** [or Simon **Cephas**]
[10] Paul wrote two epistles to these people in Greece. The first letter to these people contains a passage about becoming a man and setting childish ways aside, and claims that of hope, faith, and love, the greatest is love.
ANSWER: the **Corinthians** [or People of **Corinth**]

12. This anthropologist's book *The Savage Mind* sparked a debate with Jean-Paul Sartre. For 10 points each:
- [10] Name this French structuralist anthropologist who wrote *The Raw and the Cooked* as part of his *Mythologiques*.
ANSWER: Claude **Lévi-Strauss** [do not accept or prompt on partial answer]
- [10] Lévi-Strauss was a pioneer of structuralism in anthropology. This Swiss linguist developed structuralist linguistics with his *Course in General Linguistics*.
ANSWER: Ferdinand de **Saussure**
- [10] Saussure conceptualized linguistics as consisting of these units, which are studied by semioticians. Each one can be broken down into a signifier and a signified.
ANSWER: **signs**
13. Name these characters from a William Shakespeare play, for 10 points each.
- [10] This figure tries to exact revenge on his uncle for the murder of his father, and considers committing suicide in his "To be, or not to be" soliloquy.
ANSWER: **Hamlet**
- [10] Hamlet loves this daughter of Polonius, who drowns after Hamlet tells her to "get thee to a nunnery."
ANSWER: **Ophelia**
- [10] Hamlet muses "I knew him" over the skull of this jester, who shares his name with a parson from Laurence Stern's *Tristram Shandy*.
ANSWER: **Yorick** [or Parson **Yorick**]
14. They are defined as the sum of a series of terms consisting of a coefficient multiplied by a variable raised to some positive integer exponent. For 10 points each:
- [10] Name this general type of mathematical expression, an example of which is "five x squared" plus "two x."
ANSWER: **polynomials**
- [10] The study of polynomial equations gave rise to group theory, which this man discovered independent of Galois. This man co-names a theorem with Ruffini and names a group with commutativity.
ANSWER: Niels Henrik **Abel** [or **Abel**-Ruffini theorem; or **Abelian** group]
- [10] The Abel-Ruffini theorem states that no general formula exists for finding the roots of any polynomial of this degree or higher.
ANSWER: degree **five** [or **fifth** degree; or **quintic**]
15. This man served as king of Portugal for almost three months in 1826. For 10 points each:
- [10] Name this member of the house of Braganza, who gave the "Cry of Ipiranga" while leading a Portuguese colony to independence as its first emperor.
ANSWER: Emperor Dom **Pedro I** of Brazil [prompt on **Pedro**; or **Pedro IV** of Portugal; accept **Peter** for "Pedro"]
- [10] Pedro I was the first emperor of this nation, which is currently led by Luiz Inacio Lula da Silva.
ANSWER: Federative Republic of **Brazil** [or República Federativa do **Brasil**]
- [10] The Law of the Free Womb and the Golden Law were two Brazilian laws passed under Pedro II that outlawed this practice, which was banned in the United States by the Thirteenth Amendment.
ANSWER: human **slavery** [accept reasonable equivalents]

16. This work claims that monarchies work better in hot climates. For 10 points each:

[10] Name this work, subtitled “Principles of Political Right,” which begins “man is born free, and everywhere he is in chains.”

ANSWER: *The **Social Contract*** [or *Du **contrat social** ou Principes du droit politique*]

[10] This French Enlightenment thinker wrote *The Social Contract* and a philosophical novel on education, *Emile*.

ANSWER: Jean-Jacques **Rousseau**

[10] This other French Enlightenment philosopher wrote the *Persian Letters* and *The Spirit of the Laws*, which put forth his idea of the separation of government powers.

ANSWER: Baron de **Montesquieu** [or Charles-Louis de **Secondat**]

17. This woman’s fiancé, Haemon, kills himself out of grief. For 10 points each:

[10] Name this title character of an ancient drama who resolves to bury her brother Polynices despite King Creon’s prohibition.

ANSWER: **Antigone**

[10] *Antigone* is the last play in a trilogy about this king, who blinded and exiled himself after realizing that he had killed his father Laius and married his own mother Jocasta.

ANSWER: **Oedipus** Rex

[10] This ancient Greek author of *Philoctetes* and *Ajax* wrote *Antigone* and *Oedipus Rex*.

ANSWER: **Sophocles**

18. His *Academic Festival Overture* contains a setting of the drinking song “Gaudeamus Igitur.” For 10 points each:

[10] Name this German Romantic composer of the *German Requiem* and a namesake lullaby.

ANSWER: Johannes **Brahms**

[10] Brahms also wrote a famous D-major piece in this genre for solo instrument and orchestra, which he dedicated to Joseph Joachim.

ANSWER: **violin concerto** [prompt on **concerto**; or *Violin Concerto in D major, Op. 77*]

[10] Brahms wrote a set of twenty-one dance songs based on themes from this country, which is the home of the composers Zoltan Kodaly (koe-die) and Béla Bartók.

ANSWER: Republic of **Hungary**

19. A Dean-Stark apparatus is useful to collect water from one variety of this procedure. For 10 points each:

[10] Name this procedure from chemistry that separates compounds in solutions based on their boiling points, which comes in a “fractional” variety.

ANSWER: **distillation**

[10] Many organic compounds are very heat-sensitive and must be distilled by adding this hot gas to lower the boiling point.

ANSWER: **steam** [prompt on **water** vapor; or **steam** distillation]

[10] Solutions of this type have zero enthalpy of mixing and an activity coefficient of one, which means that their vapor pressures follow Raoult’s law perfectly.

ANSWER: **ideal** solutions [or **ideal** mixtures]

20. William the Bastard didn't earn the epithet "Conqueror" by standing around. For 10 points each:
- [10] William's Norman forces won decisively over the Anglo-Saxons at this October 1066 battle, scenes from which are embroidered into the Bayeux Tapestry.
ANSWER: Battle of **Hastings**
- [10] Two of William's contemporaries shared this given name. One, the British king surnamed Godwinson, lost at Hastings. The other was a Norwegian king whose surname was Hardraade.
ANSWER: **Harold** [their names are Harold II Godwinson and Harald Hardraade]
- [10] Before losing to William, Harold Godwinson repelled the Norwegians under Harald Hardraade at this September 1066 battle, which was named for a crossing point in the River Derwent.
ANSWER: Battle of **Stamford Bridge**

extra bonus

21. This force is mediated by gluons. For 10 points each:
- [10] Name this force responsible for holding together protons and neutrons in the nucleus of an atom.
ANSWER: **strong** force [or **strong** nuclear force; or **strong** interaction]
- [10] Quantum chromodynamics, or QCD, is the theory that this property can explain some aspects of the strong force. Values for this property can be red, green, or blue.
ANSWER: **color** charge
- [10] One result of color confinement is that these particles can never be found in isolation. These elementary particles have up, down, and charm flavors, and are the building blocks of protons and neutrons.
ANSWER: **quarks**