

SOUTHEAST-MIDWEST HOUSEWRITE: PACKET 2

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NOTE: THESE TOSSUPS AND BONUSES ARE PAIRED. IF THE TOSSUP GOES DEAD, SKIP THE ASSOCIATED BONUS. DO NOT GO BACK AND READ ANY BONUSES THAT ARE SKIPPED.

1. In one chapter, this book contrasts people who see themselves as either inheriting from the past or respecting it, known as “heirs” and “debtors” to the ages, respectively. A U-shaped curve in this book shows that the greatest freedom is given to children and elders. Hot baths and eating are considered indulgences in a chapter of this book titled “The Circle of Human Feelings.” The phrase “One never repays (*one-ten-thousand” describes *gimu* in this book, which, like *giri*, is a social debt that must be repaid. In this book, suicide is described as the most extreme form of righting social failure in one country, a phenomenon this book calls “clearing one’s name.” For 10 points, name this book that compares American “guilt culture” to the “shame culture” of Japan, written by Ruth Benedict.

ANSWER: *The **Chrysanthemum and the Sword**: Patterns of Japanese Culture*
<Valan, Anthropology> [Edited]

1. Answer the following about alkoxymercuration-demercuration (“alk-OXY-mercuration-DE-mercuration”) reactions, For 10 points each.

[E] The reactants in alkoxymercuration-demercuration reactions are these compounds. These hydrocarbons contain a carbon-carbon double bond.

ANSWER: **alkenes**

[M] Since the –OH group attacks the more highly substituted carbon, the reaction’s regioselectivity is predicted by this rule. Because of this rule, the ether with the –OR group located on the more highly substituted carbon will be the major product.

ANSWER: **Markovnikov’s** rule [do NOT accept or prompt on “anti-Markovnikov”]

[H] Alkoxymercuration-demercuration reactions commonly use this reagent dissolved in tetrahydrofuran. This compound attacks the alkene to form a mercurinium ion ring with an acetoxymercury functional group.

ANSWER: **mercury acetate** [accept **mercury(II) acetate** or **mercuric acetate**; accept **Hg(C₂H₃O₂)₂** or **Hg(OAc)₂**]
<Valan, Chemistry> [Ed. Lei]

2. The two major oceanic anoxic events of this period are evidenced by formations like the Mancos shale. The Laramide orogeny, which created the Rocky Mountains, began during this period. Sea-level regression led to the formation of a basin in the interior of North America during the Maastrichtian age within this period. The (*) Deccan traps were responsible for a period of increased volcanism at the end of this period. Geologist Luis Alvarez studied a thin layer of iridium-rich rock called the K-T boundary, which marks the transition from this period to the Paleogene period. For 10 points, name this last period of the Mesozoic era, which followed the Jurassic and concluded with the extinction of the dinosaurs.

ANSWER: **Cretaceous** period
<Valan, Earth Science> [Ed. Bowman]

2. This musical instrument has its tone shaped by eleven to thirteen *tarafdar*, or sympathetic strings, and is played with the plectrum-like *mizrab*. For 10 points each:

[E] Name this Indian musical instrument. Styles of playing it are named for Vilayat Khan and Ravi Shankar, two famous performers of this musical instrument.

ANSWER: **sitar**

[H] The sitarist Asad Khan performed on this Indian vocalist and composer's score for *Slumdog Millionaire*. This composer commemorated Indian independence with his patriotic album *Vande Mataram* ("VUHN-day MAA-tuhr-uhm").

ANSWER: Allah Rakha **Rahman** [or A.R. **Rahman**; or A.S. Dileep **Kumar**]

[M] In the Hindustani tradition, the sitar plays within one of these melodic frameworks used in Indian classical music. These frameworks are associated with different times of day, and their Sanskrit name translates as "coloring."

ANSWER: **ragam** [or **ragas**; accept **ragam** or **ragas**]

<Karthik, Classical Music> [Edited]

3. In a poem set in this place, the "golden smithies of the Emperor" are used to break a flood. That poem ends by describing a sea as "dolphin-torn" and "gong-tormented." In another poem, this place is described as containing "monuments of its own magnificence." In the first stanza of a poem about this place, "birds in the trees" are described as "those dying generations." Later in that poem, the speaker describes a song "of what is past, or passing, or to come" addressed to the lords and ladies of this place. In a poem titled for this place, a man describes himself as (*) "a paltry thing / A tattered coat upon a stick" as justification for traveling to this place. A poem about this place notes the location the speaker has left is "no country for old men." For 10 points, name this city, which the speaker of a William Butler Yeats poem is "Sailing to."

ANSWER: **Byzantium** [prompt on Constantinople or Istanbul or the Byzantine Empire] (The poem referred to in the first and second lines is Yeats' "Byzantium.")

<Karthik, Poetry> [Ed. Leahy]

3. Global warming is increasing the population of the gentoo species of these animals on Petermann Island due to their impressive adaptability. For 10 points each:

[E] Name these flightless birds. The emperor and Adélie species of these birds are the only ones to inhabit mainland Antarctica.

ANSWER: **penguins** [accept gentoo **penguins**; accept emperor **penguins**; accept Adélie **penguins**]

[M] The Humboldt ocean current allows an endangered penguin species to survive on this archipelago. Most of those penguins inhabit this archipelago's westernmost island, which is also home to the flightless cormorant.

ANSWER: **Galápagos** Islands [accept Archipiélago de **Colón**]

[H] Northern rockhopper penguins, known for their red eyes, primarily live on Gough ("GOFF") Island, part of this British island group in the south Atlantic. The Inaccessible Island rail is another flightless bird native to this island group.

ANSWER: **Tristan da Cunha**

<Sareddy, Geography> [Ed. Prabhakar]

4. This view is explained using a conversation between two farmers in “an instrument of propaganda for the peasants” by Errico Malatesta. This view was combined with the theory of social ecology in a book titled for it “Post-Scarcity.” The book *The Conquest of Bread* used the example of pianists building pianos as luxury items as part of a community in which this view is prevalent. (*) Mikhail Bakunin (“buh-KOO-nin”) believed that this ideology is incompatible with religion. Peter Kropotkin (“kro-POTT-kin”), an advocate for “propaganda of the deed,” held that the founder of this ideology was the mutualist Pierre-Joseph Proudhon (“proo-DAWN”), who claimed that “whoever lays his hand on me to govern me...I declare him my enemy.” For 10 points, name this ideology which rejects the state and existence of a ruling government.

ANSWER: **anarchism** [accept word forms like **anarchy**; accept **left-anarchism**; accept **anarcho-communism**; prompt on **ancom**; do NOT accept or prompt on “anarcho-capitalism” or “anacp”; do NOT accept or prompt on “communism” alone]

<Karthik, Philosophy> [Ed. Ashbrook]

4. This playwright explained one dramatic concept by examining the mediocrity of “Charles the Bold’s flight after the Battle of Murten.” For 10 points each:

[E] Name this playwright who coined the idea of the alienation effect in Chinese acting. He also depicted the doomed Swiss Cheese amidst the Thirty Years War in *Mother Courage and her Children*.

ANSWER: Bertolt **Brecht**

[M] Brecht also used the alienation effect in this play derived from a 14th-century Chinese work. Grusha is unable to pull her child from this play’s title construction during a parentage dispute judged by Azdak.

ANSWER: *The **Caucasian Chalk Circle***

[H] Brecht’s alienation effect inspired a Brazilian “Theatre” named for this concept, whose techniques include the “Rainbow of Desire.” The Theatre borrowed many ideological elements from the work of Paulo Freire.

ANSWER: **oppression** [or Theatre of the **Oppressed**; accept word forms like **oppressed**]

<Leahy, Drama> [Edited]

5. One queen from this dynasty was executed by being pulled apart by four horses as a result of her feud with another queen. The first monarch of this dynasty was buried with over three hundred golden insects. The Chronicle of Fredegar claims that a five-horned monster called the Quinotaur sired this dynasty’s semi-mythical founder. This dynasty’s final monarch was tonsured by Pope Zachary. Its first ruler defeated Syagrius at the Battle of (*) Soissons and implemented the Salic Law. This dynasty’s “do-nothing kings” wielded little power compared to the Mayors of the Palace. Pepin the Short ended, for 10 points, what dynasty founded by Clovis that preceded the Carolingians?

ANSWER: **Merovingian** Dynasty

<Prabhakar, British/European History> [Edited]

5. This piece of legislation removed constituencies such as the notorious Old Sarum. For 10 points each:

[M] Name this law which resulted in the creation of 130 new parliamentary seats and abolished rotten and pocket boroughs. Further iterations of this law would extend the voting franchise even further.

ANSWER: **Great Reform** Act [accept **Representation of the People Act of 1832**, accept **1832 Reform** Act; accept **Great Reform** Bill; accept **First Reform** Act; prompt on **Reform** Act]

[E] The Reform Act was passed during the prime ministership of Earl Grey, which came to an end over reforms in this colony. Daniel O’Connell was the first Member of Parliament from this colony, representing its city of Dublin.

ANSWER: **Ireland** [accept **Éire**]

[H] Earlier attempts at a Reform Bill failed under this Tory predecessor to Earl Grey. This prime minister earlier dueded the Earl of Winchilsea over his support for Catholic Emancipation, which passed during his tenure.

ANSWER: Arthur **Wellesley**, 1st Duke of **Wellington** [accept either underlined part or Duke of **Wellington**]

<Alaro, British/European History> [Ed. Prabhakar]

6. An equation created by this man is derived from the Gibbs-Helmholtz equation by using an “isotherm” named for this man that relates temperature and Gibbs free energy. For some compounds, the number of stereoisomers is 2 to the number of asymmetric carbons according to a rule this man co-names with Joseph Le Bel. It’s not Arrhenius, but graphing inverse temperature and log capital K is a straight line based on this man’s namesake equation. That equation includes a (*) delta H over R T squared term. A quantity named for this man multiplies molar mass, the gas constant, and temperature to find osmotic pressure. That quantity named for this man, denoted i, is ideally 1 for sucrose and 2 for NaCl. Changes in colligative properties are quantified by, for 10 points, a factor named for what Dutch chemist?

ANSWER: Jacobus Henricus **van 't Hoff** [accept **van 't Hoff** equation; accept **van 't Hoff** isotherm; accept Le Bel–**van 't Hoff** rule; accept the **van 't Hoff** factor]

<Valan, Chemistry> [Ed. Lei]

6. Answer the following about the “father of biogeography,” Alfred Russel Wallace, for 10 points each.

[H] Wallace discovered many new species in Indonesia including *Rhacophorus nigropalmatus*, a “flying” type of animal in this class. The Spemann–Mangold organizer was discovered in this class’s *Triturus* genus.

ANSWER: **Amphibia** [accept **amphibians**]

[E] Wallace’s paper on natural selection influenced this evolutionary biologist to publish *On the Origin of Species* in 1859. This man studied the different beak shapes of finches in the Galapagos Islands.

ANSWER: Charles **Darwin**

[M] Wallace also contributed to the development of evolutionary theory by conceptualizing this defense system that advertises to predators not to eat prey. An example of this system in use is the bright colors in poison dart frogs.

ANSWER: **aposematism** [or **aposematic** coloration; prompt on **warning coloration**]

<Sareddy, Biology> [Ed. Lei]

7. This artist depicted a man in a blue coat bayoneting the title animal as it is surrounded by dogs in his early work *The Boar Hunt*. Leocadia Weiss, who served as this artist’s maid at the end of his life, may be the subject of his painting *The Milkmaid of Bordeaux*. This artist included a depiction of owls and bats attacking a slumped figure on a desk in an etching series championed by (*) Manuel Godoy, who also commissioned this artist’s *Clothed* and *Nude* portraits of a reclining *maja* (“MAH-hah”). A painting by this artist of the series *Los Caprichos* is set during the Peninsular War and depicts a white-shirted man holding up his hands in front of a firing squad. For 10 points, name this Spanish painter of dark scenes like *The Third of May 1808*.

ANSWER: Francisco José de **Goya** y Lucientes

<Dantzler, Painting & Sculpture> [Ed. Strombeck]

7. Setthathirath (“seth-AH-thi-roth”) moved the Emerald Buddha to a city in this modern-day country in 1552. For 10 points each:

[H] Name this country from which Setthathirath ruled a kingdom whose name means a “million elephants,” Lan Xang (“lahn sahn”). The later kingdom of Champasak emerged in the south of this country after Lan Xang was divided.

ANSWER: **Laos** [or the **Lao** People's Democratic Republic]

[M] Under Setthathirath, Lan Xang successfully defeated an invasion by Burma after they conquered this Thai kingdom. This kingdom later invaded Burma under its king Narai, who employed Constantine Phaulkon in his court.

ANSWER: **Ayutthaya** Kingdom [accept **Ayudhya**; accept **Ayodhya**]

[E] Towards the end of Setthathirath’s reign, he launched a failed invasion of the Khmer (“kih-MAIR”) Empire, which was based in this modern-day country. The Khmer built Angkor Wat in this country.

ANSWER: **Cambodia** [or the Kingdom of **Cambodia**; accept Republic of **Kampuchea**]

<Sareddy, World History> [Ed. Prabhakar]

8. One collection in this language contains poems about a panther, partridge and giant whale known as the “Fastitocalon.” A section of a poem in this language is told from the point of view of a gem-laden cross as it is buried and resurrected along with Jesus. A poem in this language honoring “the guardian of heaven” and “the might of the architect” was created by the illiterate cowherd (*) Cædmon (“CAD-muhn”). The protagonist’s sword melts in a lake while he tries to avenge the soldier Æschere (“ash-hair-uh”) in a poem in this language that appears in the Nowell Codex. Scholars debate the meaning of the word “Hwæt” used to open a poem in this language whose title hero saves the mead hall Heorot from the demon Grendel. For 10 points, name this medieval language that was used to write *Beowulf*.

ANSWER: **Old English** [or **Anglo-Saxon**; do NOT accept or prompt on “Middle English” or “English”]

<Ashbrook, Short Fiction/Other> [Ed. Leahy]

8. The original formulator of this problem framed it as an issue of distinction between positive and negative duty in the paper “The Problem of Abortion and the Doctrine of the Double Effect.” For 10 points each:

[E] Name this problem first posed by Philippa Foot that asks if it is morally acceptable to divert the trolley to save five people but run over and kill one.

ANSWER: **trolley** problem [accept “**Bystander** at the **Switch**”]

[H] This thinker devised a variation of the trolley problem in which a surgeon can harvest a healthy person’s organs to save five sick people. In a thought experiment devised by this thinker, a person is kidnapped and connected to a famous violin player to keep them alive.

ANSWER: Judith Jarvis **Thomson**

[M] The trolley problem and variants ask whether deontological ethics or this ethical theory apply to certain situations. According to this ethical theory, the morality of actions should be judged on the outcome rather than the action itself.

ANSWER: **consequentialism** [accept word forms of **consequentialism** like **consequentialist** or **consequence**; accept **teleological** ethics and word forms; prompt on **utilitarianism**]

<Dantzer, Philosophy> [Ed. Ashbrook]

9. A 1648 riot over a tax on this good resulted in the governor of Moscow being hacked to pieces by an angry mob. To prevent the smuggling of this good, Allan Octavian Hume oversaw the construction of a natural barrier comprised of thorny hedges. Before winning the Battle of Tondibi, Judar Pasha destroyed a production center for this good at Taghaza. In addition to (*) iron, a state monopoly on this good was the subject of a debate organized by Huo Guang. A tax called the *gabelle* resulted in widespread smuggling and price fluctuation of this substance in France. A protest against a tax on this good ended with its illegal collection at Dandi. For 10 points, name this mineral which was the subject of a 1930 march to the Arabian Sea led by Mahatma Gandhi.
ANSWER: table **salt** [accept sea **salt**; accept **sodium chloride**; accept **NaCl**]
<Lau, Other History> [Ed. Prabhakar]

9. Pictures from late in this photographer's career include one of Pablo Picasso carrying a parasol for his lover Françoise Gilot on a beach. For 10 points each:

[M] Name this Hungarian photographer best known for a shot he took of a man with spread arms on a Spanish hillside. This photographer died after stepping on a landmine in French Indochina in 1954.

ANSWER: Robert **Capa**

[E] Capa's most famous photograph shows a *Falling* one of these people. Six of these people raise a flag on Mount Suribachi in a Joe Rosenthal photo.

ANSWER: **soldiers** [accept Spanish **soldiers**; accept American **soldiers**; accept **marines**]

[H] Capa called this book by another artist a "Bible for photographers." This book includes photos of a man jumping over a ladder surrounded by a puddle and a bicyclist passing by a staircase on a Parisian street.

ANSWER: *The **Decisive Moment*** (by Henri Cartier-Bresson) [accept **Images à la sauvette**]

<Strombeck, Photography> [Edited]

10. Imran Khan has overseen the successful implementation of a so-called "Tsunami Project" for this action in Pakistan. Countries committed to pursuing this action in the Bonn Challenge. The African Union is currently pursuing an initiative to create a "Great Wall" by promoting this action. The World Economic Forum has emphasized the number "one (*) trillion" for performing this action. YouTubers Mark Rober and MrBeast raised 20 million dollars to fund this action. The search engine Ecosia donates over 80% of its profits to perform this action. The Green Belt Movement promotes, for 10 points, what sort of action to combat climate change, which has been advocated for to reverse damage in the Amazon?

ANSWER: **planting trees** [or **forestation**; accept **reforestation**; accept **afforestation**; accept **planting forests**; prompt on answers similar to **cutting carbon emissions**, **combating global warming**, **combating climate change**, **combating deforestation**, or **combating desertification** by asking "What specific action is being referred to?"; do NOT accept or prompt on "deforestation" alone]

<Nageswaran, Current Events> [Edited]

10. Answer the following about the death of Leon Trotsky in literature, for 10 points each.

[E] In this George Orwell novel, Leon Trotsky is represented by the pig Snowball, who is run off of the title location by a pack of dogs trained by Napoleon.

ANSWER: ***Animal Farm***

[H] This playwright included *Variations on the Death of Trotsky*, which depicts eight versions of Trotsky's final moments, in his collection *All In The Timing*. For the duration of the play, Trotsky is depicted with a mountain climber's axe sticking out of his head.

ANSWER: David **Ives**

[M] Guillermo Infante described the death of Trotsky in the style of authors from this country in his novel *Three Trapped Tigers*. One of those authors from this country, Alejo Carpentier, wrote *The Kingdom of This World*.

ANSWER: **Cuba**

<Karthik, Short Fiction/Other> [Ed. Leahy]

11. A group advocating for this cause was founded by Evan Wolfson nearly a decade after serving as counsel in *Baehr v. Muike* (“mee-ee-kay.”) After refusing to recognize the decision in *Strauss v. Horton's* about this cause, several officials were sued by Kristin Perry. An ad campaign sought to spread fear about this cause, using the out of context line “The door’s wide open.... whether you like it or not” by then-mayor (*) Gavin Newsom. After *Goodridge v. Department of Public Health*, Massachusetts became the first US state to legalize this practice. Californians voted to overturn a decision supporting this cause through Proposition 8. This cause was addressed in a 2015 Supreme Court decision protested by county clerk Kim Davis. For 10 points, name this practice legalized in *Obergefell v. Hodges*.

ANSWER: legalizing **same-sex marriage** [or legalizing **gay marriage**; accept equivalents such as legalizing **marriage** between **two males**, legalizing **marriage** between **two females**, etc.; prompt on **marriage**]
<Strombeck, American History> [Ed. Nageswaran]

11. Nisus tripped Salius to help Euryalus win the foot race at this man’s funeral games. For 10 points each:
[M] Name this man who had been rendered lame by a thunderbolt from Zeus after bragging about a sexual encounter he had with Aphrodite. This man fled one city with his son and grandson Ascanius but died shortly after.
ANSWER: **Anchises**

[H] A different set of funeral races saw Athena cause this man to trip, resulting in Odysseus winning the race. This man was killed after Athena struck his ship with a thunderbolt following his rape of Cassandra.

ANSWER: **Ajax the Lesser** [accept **Locrian Ajax** and **Oilean Ajax**; prompt on **Ajax**; do NOT accept nor prompt on “Ajax the Greater” or “Telamonian Ajax”]

[E] The aforementioned race between Ajax the Lesser and Odysseus occurred during funeral games in honor of Patroclus that were held by this other hero. This man slew Hector and died after being shot in the heel with an arrow.

ANSWER: **Achilles**

<Prabhakar, Myth> [Ed. Groger]

12. In the orchestral version of Ravel’s *Tzigane* (“tsee-GAHN”), this instrument interrupts the violin’s *quasi Cadenza* at the end of its opening solo. Two of these instruments oscillate between F sharps and G sharps in the opening of Debussy’s *La Mer*, and this instrument is the soloist in Debussy’s *Sacred and Profane Dances*. This instrument joins clarinet, flute, and string quartet in an (*) *Introduction and Allegro* by Ravel. That piece showcased Érard’s double-action version of this instrument. After the opening flute solo of *Prelude to the Afternoon of a Faun*, this non-keyboard instrument enters playing a glissando, which can be performed with its 7 pedals or by moving the fingers across its 47 strings. For 10 points, name this large string instrument that is plucked by hand.

ANSWER: **harp** [or concert **harp** or pedal **harp**]

<Dantzer, Classical Music> [Ed. Strombeck]

12. *Author and type of poem required.* One of these poems opens “The poetry of earth is never dead.” For 10 points each:

[H] Name these poems that include “On the Grasshopper and Cricket.” In another of these poems that describes “bards in fealty to Apollo,” the speaker compares himself to “some watcher of the skies.”

ANSWER: **sonnets** by John **Keats** [prompt on **sonnets** with “by whom?”; prompt on **poems by Keats** with “what type of poem?”]

[M] That aforementioned poem is about this translator, whom the speaker hears “speak out loud and bold.” That poem about this translator opens “Much have I travell’d in the realms of gold.”

ANSWER: George **Chapman**

[E] Chapman translated this author of *The Iliad* and *The Odyssey*, whom Keats described as “deep brow’d” in that poem.

ANSWER: **Homer**

<Lei, Poetry> [Ed. Leahy]

13. The indigenous cattle festival Bandna often coincides with this holiday. Temples provide “mountains of sweets” as part of this holiday commemorating the harvest called Annakut. A different holiday that overlaps with this holiday celebrates when 52 prisoners were released from prison by hanging onto the gown of Guru Har Gobind. Mahavira supposedly achieved *nirvana* on this holiday. The end of the (*) churning of the ocean is commemorated on this holiday’s first day. Sisters feed their brothers on this holiday’s fifth day of Bhai Dooj. This holiday climaxes in a Lakshmi Puja on its third day. The return of Rama to Ayodhya is the inspiration for this holiday’s tradition of lighting rows of lamps. For 10 points, name this five-day Hindu festival of lights.

ANSWER: **Diwali** [or **Divali**; or **Deepavali**]

<Prabhakar, Religion> [Ed. Ashbrook]

13. 330 Marines were ordered into this nation’s capital in order to prevent the presidency of the anti-American *caco* leader Rosalvo Bobo. For 10 points each:

[H] Name this nation which was occupied by the United States for twenty years following the murder of Vilbrun Guillaume Sam.

ANSWER: Republic of **Haiti**

[M] The occupation of Haiti was part of the “Wars” named for this commodity. The 1954 Operation PBSuccess was launched to protect an American company’s monopoly over this commodity in another country.

ANSWER: **bananas** [or **Banana** Wars; prompt on fruits or United Fruit Company]

[E] The United States justified occupying Haiti in order to undermine the economic influence of this country. This country sent the Zimmerman Telegram to Mexico, leading to American entry into World War I.

ANSWER: **Germany** [or **German** Empire]

<Strombeck, American History> [Ed. Nageswaran]

14. Erich Auerbach wrote on this author’s “consciousness that he... had no place in [the world]” in a chapter of *Mimesis* named for a “Hotel” of one of this author’s characters. Before his death, one character of this author is told by his father that he must repay “the expenses of [his] board and [his] education.” In her foreword to this author’s *Memoirs of an Egotist*, Doris Lessing wrote of this author’s “passion for Napoleon,” a passion reflected in a character who reads Napoleon’s *Memoirs* before being berated by the (*) Marquis de la Mole. In a novel by this author, the main character enters a church in Verrieres and attempts to murder Madame Renal; that character was earlier faced with a choice between the army and clergy. For 10 points, name this French author who wrote of Julien Sorel in *The Red and the Black*.

ANSWER: **Stendhal** [or Henri-Marie **Beyle**]

<Karthik, Long Fiction> [Ed. Leahy]

14. You’re trying to find the volume of a region in 3D space, but you’re stuck! For 10 points each:

[E] You set up the volume as an expression involving this operation done three times. This operation from calculus measures the area under a curve.

ANSWER: **integration** [accept word forms like **integrating** or **integral**]

[M] Unfortunately, integrating in Cartesian coordinates seems to not work out so well, so you transform the integral into this other coordinate system, which uses the two angle parameters phi and theta and the distance parameter rho.

ANSWER: **spherical** coordinates

[H] If you’re still stuck, you can use this theorem to transform your volume integral into a surface integral. This theorem states that “the surface integral of a vector field is equal to the volume integral of del dot the vector field.”

ANSWER: **divergence** theorem [accept 3D **divergence** theorem; accept **Gauss**’ theorem or **Ostrogradsky**’s theorem; prompt on generalized Stokes’ theorem; do NOT accept or prompt on “Stokes’ theorem”]

<Karthik, Math> [Ed. Bowman]

15. The Gravity Probe B satellite showed evidence for two types of this phenomenon predicted by general relativity. The curvature of spacetime caused by a large mass can induce this phenomenon in the geodetic effect. Relativistic frame-dragging induced by a rotating body causes this phenomenon in the (*)

Lense-Thirring effect. A landmark test of general relativity was its ability to predict how Mercury's perihelion exhibits this phenomenon. This phenomenon can be disturbed by a regular oscillation called a nutation. If a body has different principal moments, this phenomenon can occur in the absence of torque. For 10 points, name this change in the orientation of the axis of a rotating object.

ANSWER: **precession** [accept specific types like **de Sitter precession**, **geodetic precession**, or **Lense-Thirring precession**; accept **frame-dragging** before mentioned]

<Karthik, Physics> [Ed. Bowman]

15. This scholar collected the names of almost forty thousand narrators of *hadith* and classified them based on how well they did it. For 10 points each:

[H] Name this Islamic scholar whose namesake collection of *hadiths* is regarded as the most authentic by Sunnis. This scholar's collection is noted for the detailed chronology of *isnads*, or the chains of narration for each *hadith*.

ANSWER: Muhammad ibn Ismail al-**Bukhari** [accept Imam al-**Bukhari**; accept Imam **Bukhari**; accept *Sahih al-Bukhari*]

[E] *Hadiths* supplement Islam's *sharia* law code in addition to this holy text of Islam. *Hadiths* are second only to this text in Islamic authority.

ANSWER: the **Qur'an** [or **Quran**; or **Koran**]

[M] The 11th *hadith* in *Sahih al-Bukhari* concerns this action. As the first *muezzin* ("moo-EZ-in"), the former slave Bilal ibn Rabah ("bill-ALL IB-in RAHB-ah") was responsible for this action.

ANSWER: performing the **call to prayer** [accept performing the **adhan** or **azan**; do NOT accept or prompt on "prayer" alone or "*salah*"]

<Prabhakar, Religion> [Edited]

16. The giantess Hljod was sent by this deity to give an apple of fertility to Rerir's wife. This deity seduced a servant in order to procure their help in stripping gold from a statue of this deity's spouse for jewelry. This deity also dispatched a servant who claimed a powerful wizard would come to visit Geirröd. The *Gylfaginning* ("GEEL-fuh-geen-ing") attests that this deity would send (*) Hlín to protect people in danger, while later mentioning this goddess' attendants Gná and Fulla. In the *Lokasenna*, Loki accuses this goddess of sleeping with Vili and Vé. This goddess did not extract a promise from mistletoe, later resulting in the death of this goddess' son Baldr. For 10 points, name this Norse goddess who is married to Odin.

ANSWER: **Frigga** [do NOT accept "Freya" or "Freyja"]

<Prabhakar, Myth> [Ed. Groger]

16. In tubes that emit these waves from an electron beam, the heel effect is caused by the alignment of these waves with the anode-cathode axis. For 10 points each:

[E] Name these waves in the electromagnetic spectrum with a lower energy than gamma rays and higher energy than ultraviolet waves. These waves were discovered by Wilhelm Roentgen.

ANSWER: **x-rays** [accept **x-radiation**]

[H] The continuous spectrum of x-rays emitted in an x-ray tube is this process of radiation, which occurs when an electron is decelerated after being deflected by an atomic nucleus.

ANSWER: **bremstrahlung** [accept **braking radiation**]

[M] The heel effect for x-ray tubes results in shifts of this value for the x-ray beam. This quantity is calculated as power per unit area.

ANSWER: **intensity**

<Valan, Physics> [Ed. Bowman]

17. A protein complex stabilizing these entities contains the subunit TPP1, which when damaged or mutated, leads to a loss of the POT1 subunit. These entities can be quantified through binding to a PNA probe in flow-FISH. These entities form D-loops, and their T-loops are supported by their namesake “binding protein.” The 2009 Nobel Prize in Physiology or Medicine was awarded to three researchers who discovered that these entities consist of (*) hexanucleotide repeats. Alexey Olovnikov was the first to suggest the relationship between the degradation of these entities and cancer development, and a shortening of these sequences is the primary cause of aging. For 10 points, name these nucleotide sequences on the ends of chromosomes that protect them from degradation.

ANSWER: **telomeres**

<Valan, Biology> [Ed. Lei]

17. This essay states that men are “incomplete females” and opens by claiming, “no aspect of ‘society’ [is] at all relevant to women.” For 10 points each:

[H] Name this radical feminist essay. The author of this essay later shot a man for “losing” the script to her play *Up Your Ass*, thinking he was conspiring with Maurice Girodias to steal her literary output.

ANSWER: ***SCUM Manifesto***

[M] The *SCUM Manifesto* gained much attention after this woman, its author, attempted to murder Andy Warhol by shooting him in The Factory.

ANSWER: Valerie Jean **Solanas**

[E] The radical feminism advocated by Solanas separated from the more moderate feminism supported by this author. This author tackled “the problem that has no name” in her book *The Feminine Mystique*.

ANSWER: Betty **Friedan**

<Ashbrook, Other> [Edited]

18. One government in this modern-day country employed a tactic called Fireforce to encircle guerrillas using airborne forces. Operations Dingo and Eland were launched from this modern-day country against rebel bases in its eastern neighbor. This country’s military massacred members of one of its ethnic minorities in the Gukurahundi, carried out in part by this country’s North Korean-trained (*) Fifth Brigade. Joshua Nkomo’s ZAPU joined with this country’s ZANU to form its ruling political party, ZANU-PF, which has sought to seize land from this country’s white minority. Robert Mugabe led, for 10 points, what southern African country formerly known as Rhodesia?

ANSWER: Republic of **Zimbabwe**

<Prabhakar, World History> [Edited]

18. In one portrait, this subject wears a wide-brimmed hat and a white jacket over a dress with a blue stripe at the waist. For 10 points each:

[H] Name this subject who more famously appears seated on a throne in a painting dominated by her gold leaf clothing and background. That portrait was returned to Maria Altmann decades after it was seized by Nazis.

ANSWER: Adele **Bloch-Bauer** [accept *Portrait of Adele Bloch-Bauer I* or *Portrait of Adele Bloch-Bauer II*]

[E] This Vienna Secession artist created the portraits of Adele Bloch-Bauer. He also used gold leaf in his painting of two lovers embracing, *The Kiss*.

ANSWER: Gustav **Klimt**

[M] Klimt was inspired to use gold leaf after seeing its use in artworks from this medium at the Church of San Vitale in Ravenna. Those works in this medium depict Byzantine figures like Justinian and Belisarius.

ANSWER: **mosaics** [prompt on tiles]

<Dantzler, Painting & Sculpture> [Ed. Strombeck]

19. A 1949 George Balanchine production of this ballet with costumes by Marc Chagall was the breakout role of Maria Tallchief. After a character in this ballet is lulled to sleep, his palace disappears in this ballet's finale, which begins with a horn solo in 3/2 ["three two"] time. This ballet's protagonist falls in love with one of thirteen princesses who dance a (*) *Khorovod*. This ballet's original production, with choreography by Michel Fokine, began its composer's partnership with Sergei Diaghilev's *Ballets Russes* ("bah-LAY ROOS"). The title creature of this ballet forces a group of soldiers to do an "Infernal Dance" and helps Ivan to destroy the egg that keeps Koschei the Immortal alive. For 10 points, name this ballet by Igor Stravinsky about a magical avian.

ANSWER: *The Firebird* [or *L'oiseau de feu*; or *Zhar-ptitsa*]

<Dantzer, Dance> [Ed. Strombeck]

19. Derek Walcott depicts a performance showing this man as "the Slave" and his companion as "the Boss" in his play *Pantomime*. For 10 points each:

[E] Name this Daniel Defoe character based on Alexander Selkirk, who is deserted on the "Island of Despair" with Friday.

ANSWER: Robinson Crusoe

[M] This author depicted Friday without a tongue in his retelling of the Robinson Crusoe story titled *Foe*. This author also wrote a novel in which the professor David Lurie moves to his daughter's farm after an affair with a student.

ANSWER: J.M. Coetzee [or John Maxwell Coetzee]

[H] This author coined the term "inverted Crusoeism" to describe his novel *Concrete Island*, in which an architect becomes stranded on a median strip after a car accident. This author also wrote about a doctor with a fetish for car accidents in his novel *Crash*.

ANSWER: J.G. Ballard [or James Graham Ballard]

<Leahy, Long Fiction> [Edited]

20. In a play, a member of this profession claims his "diseased organism" makes it dangerous for him to "inhale the dust" after being asked to take over the Baron's sweeping duties. That character says he is "on the way to regeneration" while dreaming of treatment at a sanatorium. In another play, a member of this profession calls a performance "decadent trash" after ridiculing the scent of sulphur. A character with this profession engraves a medallion with the phrase (*) "If you ever need my life, come and take it" and gives it to Boris Trigorin. A man with this profession hangs himself at the end of Maxim Gorky's *The Lower Depths*. While working with Anton Chekhov, methods for people of this profession were developed by Konstantin Stanislavski. For 10 points, name this profession of Arkadina and Nina in *The Seagull*, both of whom perform in plays.

ANSWER: actors [accept actresses; accept acting]

<Kala, Drama> [Ed. Leahy]

20. Gondophares established a kingdom centered on this river. For 10 points each:

[H] Name this river. Roman merchants visited the city of Barbarikon at this river's delta, while an earlier expedition led by the admiral Nearchus traveled down this river.

ANSWER: Indus River

[M] Gondophares was originally from this empire, which was ruled by the Arsacid Dynasty. This empire's horse archers were famous for their namesake "shot" wherein they could turn 180° and fire arrows at their enemies.

ANSWER: Parthian Empire [prompt on Persian Empire]

[E] In an attempt to counter Parthian expansion into the Indus river valley, the rival Saka kingdom sent emissaries to this Roman emperor to negotiate an anti-Parthian alliance. This man was also the first Roman emperor.

ANSWER: Augustus [accept Octavianus, Gaius Octavius, Gaius Octavius Thurinus or Gaius Julius Caesar Octavianus; prompt on Caesar; do NOT accept or prompt on "Julius Caesar"]

<Prabhakar, Other History> [Edited]
