2022 ACF Winter

Packet 4 by CWRU B, Oxford B, Virginia A, MIT C

Edited by Joseph Krol, Eric Mukherjee, Justin Zhang, Henry Goff, Eve Fleisig, Athena Kern, Ani Perumalla, Hari Parameswaran, Govind Prabhakar, Ethan Ashbrook, Nick Jensen

Tossups

1. A section of this piece opens with an “Allegro con brio, feroce” (“fair-OH-chay”) scherzo on the notes [read slowly] F sharp, G [pause] F sharp-F sharp, G. This piece’s dedicatee added annotations to each of its movements, such as one describing a “Polish cart on enormous wheels.” Alternating fortissimo and piano dotted half notes make up the first section of a movement of this piece whose second section is marked “Cum mortuis in lingua morta.” This piece’s “Catacombs” movement was among those included in Maurice Ravel’s orchestration of it, which uses a trumpet solo for its opening “Promenade.” This suite includes the movements “The Hut on Fowl’s Legs” and “The Great Gate of Kiev.” For 10 points, the paintings of Viktor Hartmann inspired what piano suite by Modest Mussorgsky?

ANSWER: ***Pictures at an Exhibition*** [or ***Pictures from an Exhibition****,* or***Kartinki y vystavski***; accept “The **Hut on Hen’s Legs**” or “The **Hut on Fowl’s Legs**” until “each of its movements” is read and prompt afterwards]

<Classical Music>

2. This thinker names a “gap” proposed by Robert Cummins that refers to the problem of being unable to use scientific processes to explain thoughts. He’s not Spinoza, but this thinker made a distinction between necessary and contingent truths to argue that truths of reasoning can be reduced to identities. This thinker invented the metaphysical principle that distinct objects can’t have all of their properties in common. This philosopher’s treatise *Discourse on Metaphysics* repeated claims about God that he arrived at using the principle of contradiction and the principle of sufficient reason. For 10 points, name this German author who claimed we must be in the best of all possible worlds, and who pioneered calculus independently of Isaac Newton.

ANSWER: Gottfried **Leibniz** [or Gottfried Wilhelm von **Leibniz**; accept **Leibniz**’s gap; accept **Leibniz**’s law]

<Philosophy>

3. R. S. H. Liu proposed that this phenomenon induces the volume-preserving hula-twist mechanism. The effect of this phenomenon is the subject of the Grotthus–Draper law. A detection device for this phenomenon generates mobile “holes” and stores them in a charge inversion region before measuring the voltage change of the local electrode. Processes that [emphasize] *do* *not* result in this phenomenon are shown as squiggly lines on Jablonski diagrams. Selectors that filter for certain forms of this phenomenon include grating monochromators. When electrons in atoms drop from excited states down to their ground state, this phenomenon is emitted. For 10 points, electricity is generated when what phenomenon is incident on solar panels?

ANSWER: **light** [accept **photon**s; accept **UV** or **infrared** light; accept visible **light**; accept **fluorescence** or **fluorescent** light; prompt on absorbing or absorption by asking “of what phenomenon?”; prompt on photoisomerization or photoreaction by asking “induced by what phenomenon?”; prompt on wavelength or EM radiation or electromagnetic radiation]

<Chemistry>

4. This leader planned a “zone of peace” with France-Albert René (“FRONCE ahl-BAIR ruh-NAY”), but later prepared an invasion to forestall Paul Bérenger’s (“BAIR-on-zhay’s”) putative pro-Creole government in the abortive Operation *Lal Dora* in Mauritius. Police under this leader killed protesters of targeted demolition at the Turkman Gate, motivating the Shah Commission. This leader ordered air strikes in response to Operation Chingiz Khan to support a “Liberation War” against a 1971 genocide launched by Operation Searchlight. This leader, who oversaw the “Smiling Buddha” nuclear test and ruled by decree during “the Emergency,” was assassinated by bodyguards in 1984 in retribution for attacking Punjab’s (“pun-JOB’s”) Sikh temples in Operation Blue Star. For 10 points, Sanjay (“SUN-jay”) and Rajiv (“RAH-jeev”) were the sons of what daughter of Jawaharlal Nehru (“juh-VAH-hurr-LAHL NEH-roo”), the first female prime minister of India?

ANSWER: **I**ndira **Gandhi** [or **I**ndira Priyadarshini **Gandhi** or **I**ndira Priyadarshini **Nehru**; prompt on Gandhi or Nehru] (The “Indian Ocean Zone of Peace” was a precursor of the Indian Ocean Commission; René was the president of Seychelles. The third line refers to the Bangladesh Liberation War and Indo-Pakistani War of 1971.)

<World History>

5. Jimmy Mundy’s arrangement of a song by an artist with this first name incorporated elements of Chu Berry’s “Christopher Columbus.” The Kids See Ghosts track “4th Dimension” samples a Christmas song by an artist with this first name, who wrote another song’s lyrics like “listen to the trombones go.” At a 1938 Carnegie Hall concert, Benny Goodman’s band performed the song “Sing, Sing, Sing” by an artist with this first name and the surname Prima. Another artist with this first name popularized his mentor King Oliver’s song “West End Blues” while leading his “Hot Five.” That artist with this first name pioneered scat singing on his recording of “Heebie Jeebies.” For 10 points, give this first name of a trumpeter who sang of “trees of green, red roses too” on “What a Wonderful World,” who had the surname Armstrong.

ANSWER: **Louis** [or **Louie**; accept **Louis** Armstrong or **Louie** Daniel Armstrong; accept **Louis** Prima]

<Other Arts (Jazz)>

6. A song about this war that was set to the tune of the “Unfortunate Miss Bailey” notes how the title men were “half a horse” and “half an alligator.” A man’s supposed actions during a battle in this war were memorialized in a slogan that began “Rumpsey Dumpsey, Rumpsey Dumpsey.” A battle in this war inspired Samuel Woodward to write a song celebrating the actions of the “Hunters of Kentucky,” who helped defend the Chalmette Plantation. Richard Mentor Johnson claimed to have killed Tecumseh during this war’s Battle of the Thames. A poem later set to the tune of “Anacreon in Heaven” was inspired by this war’s bombing of Fort McHenry. For 10 points, Francis Scott Key composed “Star-Spangled Banner” during what war that included the burning of Washington?

ANSWER: War of **1812**

<American History>

7. The relatively high prevalence of “hidden” examples of these things may be explained by Pollock and Seligmann’s ambush hypothesis. When preparing phage display libraries, a strain of *E. coli* that ignores one of these things, called a suppressor strain, allows the incorporation of the insert onto the phage coat. The presence of a downstream PYLIS (“PAI-liss”) or SECIS (“SEE-siss”) element changes the function of these things to direct the incorporation of pyrrolysine or selenocysteine. These things mark the end of an ORF (“orf”). These things direct the addition of a water molecule by a release factor to the C-terminus of a growing polypeptide. These things, which are named amber, ochre, and opal, are prematurely created by nonsense mutations. For 10 points, name these nucleotide triplets that terminate translation.

ANSWER: **stop** codons [or **stop** signal or **termination** codons; accept **nonsense** mutations until read; accept **amber** or **opal** or **ochre** until each is read; prompt on codons or anticodons]

<Biology>

8. At the age of three, a boy with this first name shocks his mother when a pot slowly moves towards the edge of a table after he says that soup is going to spill. A character with this first name faints after refusing to accept a draw during an eating contest with a woman nicknamed “The Elephant.” A character with this first name dies in a windstorm just minutes after a baby who also has this first name is devoured by ants. In a novel, seventeen characters with this first name are murdered due to the permanent ash crosses on their foreheads. At the start of that novel, a character with this first name recalls the first time he saw ice as he faces a firing squad. For 10 points, a colonel with what first name is the son of José Arcadio Buendía (“hoh-SAY ahr-CAH-dee-oh bwen-DEE-ah”) in *One Hundred Years of Solitude*?

ANSWER: **Aureliano** (“oh-ray-lee-AH-noh”)[accept Colonel **Aureliano** Buendía or **Aureliano** José Buendía or **Aureliano** Segundo Buendía or **Aureliano** Babilonia Buendía]

<World Literature>

9. This deity’s names are often invoked while making an offering made from water and three twigs during Baj prayers. He’s not Marduk, but this deity’s most commonly used name literally translates to “Lord of Wisdom.” According to tradition, a priest fetching holy water was brought before this deity by Vohu Manah. In an offshoot religion, this deity is not the creator but is instead one of the twin sons of the sect’s eponymous primary spirit, Zurvan. This deity had emanations known as the Amesha Spenta and created good spirits known as yazatas to fight against evil gods known as daevas. For 10 points, name this deity who opposes the evil Angra Mainyu, and who is the primary god of Zoroastrianism.

ANSWER: **Ahurā Mazdā** [or **Ormazd** or variants like **Hurmuz** or **Hormazd** or **Oromasdes**]

<Religion>

10. A man in this novel notes the “ache of modernism” in a woman who is impressed by his harp-playing. After fleeing to an overgrown plantation, a woman in this novel mercifully snaps the necks of several wounded pheasants. This novel’s protagonist tells her brother that they live on a “blighted star” before she falls asleep and crashes into a cart, killing their horse. This novel ends as two characters observe a black flag signifying the execution of the title character, whose final words are “I am ready” after being found asleep at Stonehenge. This novel’s protagonist shares an aristocratic surname with her rapist Alec, whom she murders before reuniting with her husband, Angel Clare. For 10 points, name this novel about the title former milkmaid, written by Thomas Hardy.

ANSWER: ***Tess of the d’Urbervilles*** [or ***Tess of the d’Urberville****s: A Pure Woman Faithfully Presented*; prompt on *Tess*]  
<British Literature>

11. An “open eye” is formed in a container of this substance when adjusting its composition via sealed argon bubbling. The SAE’s 41xx (“forty-one X-X”) series of this substance is made using molybdenum. Examples of this substance made prior to the use of the Linz–Donawitz process are often salvaged from shipwrecks due to their low background radiation. It’s not an element, but rapidly cooling this substance causes it to harden as it transitions from its austenite structure to its martensite structure. Basic oxygen furnaces and open hearth furnaces are used to produce this substance, which is formed by blowing air through an element’s “pig” variety in the Bessemer process. For 10 points, what alloy formed mainly from carbon and iron has a “stainless” variety?

ANSWER: **steel** [accept stainless **steel**; accept carbon **steel**; accept alloy **steel**; accept **cast iron**; accept low-background **steel**; reject “iron” or “Fe”]

<Other Science>

12. Georg Heinrich Flock organized resistance to one of these events after the Prince von Dornheim ordered the execution of a relative. These events contributed to primitive accumulation of capital according to a 2004 book by Silvia Federici. Planning these events brought a fortune to the former lawyer Matthew Hopkins. A frost that devastated a wine harvest sparked a series of these events in Bamberg in the 1620s and 1630s. After being expelled from Innsbruck, the Dominican friar Heinrich Kramer authored a text endorsing these events titled for a “hammer,” the *Malleus Maleficarum*. Common practices during these events involved pricking the skin and seeing if subjects would float after being thrown into a river. For 10 points, name these events that convicted women for supposed magical powers.

ANSWER: **witch** hunts [or **witch** trials; or descriptions of **witch**es being tried or executed or burned; prompt on ordeals or trials or equivalents] (The book in the second sentence is *Caliban and the Witch*.)

<European History>

13. In the preface to one of his novels, this author compares novelists to different windows in a “house of fiction” and praises a scene in which the protagonist contemplates her stepdaughter’s suitors in front of a dying fire. This author argued against Walter Besant’s suggestion that novels be confined to the author’s experience in an essay from his collection *Partial Portraits* titled “The Art of Fiction.” In his *New York Edition*, this author prepended a preface regarding his time in Florence to a novel in which Pansy is revealed to be the daughter of Madame Merle. In that novel by this author, the protagonist visits the dying Ralph Touchett before returning to Rome and her husband Gilbert Osmond. For 10 points, name this author who created Isabel Archer in his novel *The Portrait of a Lady*.  
ANSWER: Henry **James**  
<American Literature>

14. In the *Volundarkvida* (“VOH-lun-dar-k’VEE-dah”), Völund (“VOH-lund”) and his brothers marry some of these non-human creatures before they mysteriously leave 10 years later. The maiden Fionnghuala (“fee-ah-NWAH-lah”) and her brothers are turned into these creatures by their stepmother Aoife (“EE-fah”) in the Irish story *The Children of Lir*. These creatures transport a knight who must never be asked his name in Wolfram von Eschenbach’s epic *Parzival*. They’re not seals, but a prevalent European folktale motif revolves around men stealing the transformational garments of “maidens” named for these creatures. In the *Kalevala* (“KAH-lay-vah-lah”), Lemminkäinen (“lemon-KAI-nin”) gets chopped into pieces while trying to kill one of these creatures in Tuonela (“TOO-oh-nell-ah”). For 10 points, Zeus raped Leda in the form of what beautiful white bird identified with the constellation Cygnus?

ANSWER: **swan**s [or **Schwan**e; or **svan**r; or **eala**í; or **joutsen**ia; accept **cygni** or **cygnus**; accept the **Swan** Knight; accept **swan** maidens; prompt on birds or avians or Aves or waterfowl]

<Mythology>

15. A character in this play shrieks and puts out a lamp at sunrise after her son tells her that she “must come to the rescue.” After being warned not to show a lack of “faith in a Higher Providence,” a character in this play is convinced not to insure a building named for her husband, a captain who had an affair with a maid. In this play, Jacob makes an offer to take the blame when an orphanage is accidentally burned down by Pastor Manders. After Regina and her half brother unknowingly fall in love in this play, Helen learns that her son Oswald has inherited syphilis from his father when Oswald asks her to euthanize him. For 10 points, Mrs. Alving describes the title supernatural figures as representing “dead ideas” and “lifeless beliefs” in what play by Henrik Ibsen?

ANSWER: ***Ghosts***[or ***Gengangere***]

<European Literature>

16. A concession for processing this resource was condemned in a 1930 report by trypanosome researcher Cuthbert Christy, causing the resignation of President Charles D. B. King. Walter Hardenburg indicted the “devil’s paradise” created by J. C. Arana’s control of this resource in Putumayo (“poo-too-MAH-yo”). This resource and tin were the main exports of British Malaya. During its fin de siècle (“fahn duh SYECK-ull”) “boom,” many Sephardic Jews traded coffee and this crop from Iquitos (“ee-KEE-toce”) and Manaus (“mah-NOWCE”). Square dancing was compulsory for collectors of this resource in the failed company town of Fordlândia, Brazil. E. D. Morel and Roger Casement exposed the Force Publique chopping off workers’ hands to enforce this crop’s quotas in the Congo Free State. For 10 points, what crop was processed by Firestone after Charles Goodyear invented its vulcanization?

ANSWER: **rubber** [accept **latex**; accept vulcanized **rubber**; accept Amazon **rubber** boom or Ciclo da **borracha**; accept Pará **rubber** trees or **sharinga** or ***Hevea*** *brasiliensis*; accept **caucho** or **caoutchouc**; prompt on trees or euphorbias or spurges] (The first line refers to Harbel’s Firestone plantation in Liberia, which still exists. Arana controlled the Peruvian Amazon Company.)

<Other History>

17. This constant’s value is renormalized by the Immirzi (“ih-MEER-zee”) parameter. Apparent coincidences in physical values inspired the claim that this quantity is inversely proportional to time as part of Dirac’s large numbers hypothesis. This least-accurately-known fundamental constant multiplies “8 pi over the speed of light to the power 4” in a theory’s field equations. The hierarchy problem concerns the small value of this fundamental constant, which in meters cubed per kilogram per second squared equals “6.674 times 10 to the minus 11.” This constant times the product of two masses all over distance squared gives the strength of a fundamental force. For 10 points, name this constant that appears in Newton’s universal law of its eponymous force.

ANSWER: **gravitational** constant [or big **G**; or universal **gravitational** constant or **Newton**’s constant or **Newtonian** constant of gravitation or **Cavendish** constant; prompt on gravity or gravitation; reject “little g”]

<Physics>

18. In a work that uses this technique, a woman holds a baby by a bare tree as a seated nude woman with a red and white plaid (“plad”) hat places her foot in a basin. This technique was used to depict artists such as Käthe  (“KAY-tuh”) Kollwitz and Weimar politicians in a work whose artist also used this technique in the series *From an Ethnographic Museum*. This technique was used for *The Calabash* byRomare (“ROH-muh-ree”) Bearden, as well as for a work partly titled for a *Kitchen Knife Dada* by Hannah Höch (“herk”). Due to his failing health, Henri Matisse designed the prints in the book *Jazz* using découpage, a version of this general technique that was used for Dadaist photomontages. For 10 points, name this technique in which paper, photographs, or other materials are glued onto a painting.

ANSWER: **collage** [accept **découpage** until read; accept **cut-out**s; accept **photomontage** until read]

<Painting & Sculpture>

19. This thinker, who is not Heinz Von Foerster, gave a conference address entitled “The Cybernetics of Cybernetics” that helped pioneer the field of second-order cybernetics. Martin Orans defended this thinker’s ability to identify jokes in *Not Even Wrong*. This thinker described how a society’s men “primped” themselves while the women worked in a book that contrasts the Tchambuli, Mundugumor, and Arapesh. This author was argued to have been misled by a lying informant in a book on their “Fateful Hoaxing*”* by Derek Freeman. This author of *Sex and Temperament in Three Primitive Societies* may have romanticized adolescents in a book about sexual development on the island of Ta’u. For 10 points, name this anthropologist who wrote *Coming of Age in Samoa.*

ANSWER: Margaret **Mead**

<Social Science>

20. A protester from this country, who became iconic when she was killed while wearing a T-shirt reading “Everything Will Be OK,” was nicknamed “Angel.” On the 2022 anniversary of a change of government in this country, business owners shut their stores in the “Silent Strike.” Symbols of a protest movement in this country include a red ribbon and the song “Kabar Maykay Bu” (“KAH-bar MAY-kay boo”). A dance workout video filmed in this country captured vehicles involved in a 2021 coup, which was followed by its ongoing Spring Revolution. In 2021, this country’s Tatmadaw (“TAT-mah-dor”) armed forces overthrew a Nobel Peace Prize winner who has been criticized for her response to the genocide of its Rohingya (“roh-HIN-juh”) population. For 10 points, name this country once led by Aung San Suu Kyi (“aong sahn soo CHEE”).

ANSWER: **Myanmar** [or **Burma** or **Bama**; or **Mranma**; or Republic of the Union of **Myanmar** or Pyidaungzu **Myanma** Naingngandaw] (The first line refers to Kyal Sin.)

<Current Events>

TB. In one story, this deity beat another in a drinking contest and convinced him to hand over his *mes*, or divine decree for rule. To save this deity, a god used the dirt under his fingernails to create kurjara and galatura, who gave this deity the food and water of life. The eight-pointed star is a symbol of this deity, who rode in a chariot pulled by lions. This deity was revived with the help of the attendant Ninshubur after a journey that involved several run-ins with the gatekeeper Neti. To complete the funeral rites for Gugulanna, this deity had to remove seven pieces of clothing while descending through the underworld. Gilgamesh threw the Bull of Heaven at this consort of Dumuzid after turning down her advances. For 10 points, name this Mesopotamian goddess of war and love.

ANSWER: **Ishtar** [or **Inanna**; accept **Astarte** or **Ashtart**]

<TB (Mythology)>

Bonuses

1. Answer the following about PARP (“parp”) inhibitors, for 10 points each.

[10e] PARP inhibition is synthetic lethal with mutations in BRCA1 (“BRACK-uh-one”) or BRCA2 (“BRACK-uh-two”), which confer a genetic risk for this disease. This disease is screened for with self-exams and mammograms.

ANSWER: **breast cancer** [prompt on cancer or tumors]

[10m] PARP inhibition is also synthetically lethal with mutations in this tumor suppressor, whose inherited mutations cause Li​​–Fraumeni (“fro-MAY-nee”) syndrome. This protein is mutated in about 50 percent of human cancers.

ANSWER: **p53** [or T**P53** or tumor **protein 53** or tumor suppressor **protein 53** or TR**P53** or transformation-related **protein 53**]

[10h] This E3 ubiquitin ligase targets p53 for degradation. Staining for CDK4 or this protein can be used to distinguish liposarcoma from benign lipomatous (“LAI-po-muh-tuss”) tumors.

ANSWER: **Mdm2** [or **mouse double minute 2** homolog]

<Biology>

2. A man obsessed with the “blank spaces” on maps is dismayed to discover that one of them has become a “place of” this concept. For 10 points each:

[10h] Name this concept that “was here yesterday” according to a character sitting aboard the *Nellie* in a frame story, who suddenly notes that the Thames has been one of the “places of the earth” described by this concept.

ANSWER: **dark**ness [accept **dark** places of the earth]

[10e] Chinua Achebe’s essay “An Image of Africa” criticized this Polish-British author for equating Africans with the title concept in his novella *Heart of Darkness*.

ANSWER: Joseph **Conrad** [or Josef Teodor **Konrad** Korzeniowski]

[10m] Contra Achebe, this postcolonial thinker praised Conrad for recognizing the “autonomy” of darkness in the essay “Two Visions in *Heart of Darkness*” from his collection *Culture and Imperialism*.

ANSWER: Edward **Said** (“sai-EED”) [or Edward Wadie **Said**]

<British Literature>

3. An essay compares today’s workmen with the life of this man, whose “hatred of death” leads to the “unspeakable penalty” of accomplishing nothing. For 10 points each:

[10m] Name this man who is used as an example of an “absurd hero” in an essay that he titles, which ends by stating, “One must imagine [this man] happy.”

ANSWER: **Sisyphus** [or **Sisyphe**; accept “The Myth of **Sisyphus**” or “Le mythe de **Sisyphe**]

[10e] “The Myth of Sisyphus” was written by this French author and thinker, whose philosophy of absurdism is prominent in his novel *The Stranger*.

ANSWER: Albert **Camus** (“cah-MOO”)

[10h] Camus holds that “from the moment absurdity is recognized, it becomes” one of these things. Book Two of David Hume’s *A Treatise of Human Nature* claims these specific things are solely responsible for human motivation.

ANSWER: **passion**s [accept “Of the **Passions**”; prompt on emotions]

<Philosophy>

4. This city was renamed “Shōnan” during its control by the Kempeitai, who massacred Chinese residents in the “Sook Ching” and tortured detainees at Changi Prison in the “Double Tenth Incident.” For 10 points each:

[10m] Name this city where Azad Hind was based during its Japanese occupation. This “Gibraltar of the East” in the Straits Settlements fell four days before the bombing of Darwin in 1942.

ANSWER: **Singapore** [or **Singapura** or **Xīnjiāpō**; accept Battle of **Singapore** or Fall of **Singapore**]

[10h] After the fall of Singapore, the Japanese advance on New Guinea was halted in this 1942 campaign, which is named for a trail whose Papuan carriers were given a racist nickname by Australian troops.

ANSWER: **Kokoda** Track campaign [accept **Kokoda** Trail]

[10e] This defunct interwar predecessor of the United Nations awarded Japan the “South Seas Mandate” that it used to launch its capture of Rabaul, which precipitated the Kokoda Track campaign.

ANSWER: **League** of Nations [or **Société** des Nations; accept the **League**]

<World History>

5. During the 16th century, these works changed from featuring a large central figure to featuring three equally sized figures to create triadic symmetry. For 10 points each:

[10m] Name these reliefs that include a plaque depicting a river-leaf motif and a coral-clad king with two mudfish at his waist. Some of these works, made with lost-wax casting, depict Portuguese visitors to a West African kingdom.

ANSWER: **Benin** **Bronze**s [or **Benin** **Brass**es; accept **Edo** in place of “Benin”; accept **oze** or **ęronwo** or **eronmwen** in place of “Bronzes”; prompt on bronzes or brass sculptures]

[10h] The king in that plaque holds two of these animals, which symbolized the Oba of Benin, while other reliefs depict their heads on warriors’ armor. West African stools depicting these animals share their name with the character Osebo.

ANSWER: **leopard**s [or ***P****anthera* ***pardus***; or **ekpe** or **ekpen**; accept **Ekpe** n’Owa or “**leopard** of the house”; prompt on big cats or felines or felids or *Panthera*]

[10e] After being looted by English forces invading Nigeria, many Benin Bronzes were taken to this London museum, where they remain on display. This museum has refused to return the Elgin Marbles to Greece.

ANSWER: **British** Museum

<Painting & Sculpture>

6. Yao Bikuni ate the flesh of a creature of this type called a ningyo*,* allowing her to live for one thousand years before becoming a Buddhist nun. For 10 points each:

[10e] Name these general mythological creatures often depicted with the top half of a human and bottom half of a fish.

ANSWER: **mermaid**s [or **merpeople** or **merfolk** or **mermen**; prompt on sirens]

[10h] Mermaids from this country called sirenas live with other aquatic humanoids called siyokoysand kataws. A monster from this country that resembles a bipedal horse makes travelers lose their way in the forest.

ANSWER: **Philippines** [or Republic of the **Philippines**; or Republika ng **Pilipinas**] (The bipedal horse is the tikbalang.)

[10m] In Thai myth, Suvaṇṇmacchā was a mermaid who fell in love with this god while he built a bridge from India to Lankā. This vānara was the son of Vāyu.

ANSWER: **Hanumān** [accept **Ānjaneya**] (The vānara were monkeys.)

<Mythology>

7. The stability of these systems is quantified by their zeta potential, which is measured at their slipping plane. For 10 points each:

[10m] Name these systems whose stability decreases when they undergo flocculation.

ANSWER: **colloid**s [or **colloid**al suspensions or **colloid**al dispersions; prompt on dispersions or suspensions; prompt on aerosols or gels or emulsions by asking “that is an example of what more general type of system?”]

[10h] This theory posits a Yukawa potential proportional to the Bjerrum (“B’YEH-rum”) length in order to model the effects of electrical double layers on the stability of colloids.

ANSWER: **DLVO** theory [or **Derjaguin–Landau–Verwey–Overbeek** theory]

[10e] DLVO theory combines the effects of electrical double layer forces and these weak intermolecular forces, which include London dispersion forces and are named after a Dutch scientist.

ANSWER: **van der Waals** forces [or **van der Waals** interaction]

<Chemistry>

8. Gabriel-Joseph de la Vergne (“VAYR-nyuh”) attributed a series of these works to a Portuguese nun, despite writing them himself. For 10 points each:

[10h] Name this type of work. Madame de Sévigné (“say-veen-YAY”) gained fame from the publication of over 1,000 of these works that she wrote over the course of 30 years.

ANSWER: **letter**s [or **correspondence**s; or **missive**s; or **epistle**s; accept **epistolary** novels; accept ***Letter****s of a Portuguese Nun* or *Les* ***Lettre****s Portugaises*]

[10e] The narrator’s grandmother admires the letters of Madame de Sévigné (“say-veen-YAY”) in this author’s novel *In Search of Lost Time*.

ANSWER: Marcel **Proust** (“proost”) [or Valentin Louis Georges Eugène Marcel **Proust**]

[10m] In her novel *Letters from a Peruvian Woman*, Françoise de Graffigny (“frahn-SWAHZ duh grah-feen-YEE”) criticizes French society from a fictional outsider’s perspective in the style of this French author’s *Persian Letters*.

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

<European Literature>

9. Heraclius sent the monoenergist Georgian prefect Cyrus to hunt down this group’s Miaphysite leader Benjamin I in 631, shortly after their homeland’s brief Sasanian conquest. For 10 points each:

[10h] Name this ethno-religious group that converted people to their south in Alodia and Nobatia. Shenoute led this group’s White Monastery in Sohag, where 11th-century frescoes depict their rule by Badr’s Armenians.

ANSWER: **Copt**s [or **Coptic** Christians; or **niremənkhēmi** or al-**qibṭ**; accept **Coptic** Orthodox Church or al-Kanīsa al-**Qibṭiyya** al-ʾUrṯūḏuksiyya or Ti.eklyseya en.**remenkimi** en.orthodoxos; prompt on Egyptians or El-Maṣreeyeen or Ewlad Maṣr or Miṣr; prompt on Oriental Orthodox or Christians]

[10m] The Coptic Patriarch of Alexandria chose the head of this kingdom’s Tewahedo Church before a 9th-century schism. Kaleb and Ezana were Christian neguses of this kingdom based in modern-day Eritrea and Ethiopia.

ANSWER: **Aksum** [or Kingdom of **Axum** or **Aksum**ite Empire or Mängəśtä ʾ**äksum**; prompt on Abyssinia]

[10e] Abraha of Aksum supposedly invaded this Qurayshi city in 570 CE’s “Year of the Elephant.” Some early Muslims fled to Adulis and Aksum [emphasize] *from* this birthplace of the Prophet Muhammad in the “First Hijra.”

ANSWER: **Mecca** [or **Makkah** or **Makkah** al-Mukarramah; accept **Umm al-Qura**]

<Other History>

10. Residents of a region of this U.S. state jokingly call tourists to one of its islands “fudgies” because they are rarely able to leave without purchasing its famous fudge. For 10 points each:

[10e] Name this US state where “yoopers” and “trolls” occupy Upper and Lower Peninsulas framed by four of the five Great Lakes, including one that provides this state’s name.

ANSWER: **Michigan** [or **MI**; accept Upper Peninsula of **Michigan** or Lower Peninsula of **Michigan**]

[10m] Finnish immigrants welcomed the Cornish diaspora’s baked pasties (“PASS-tees”) to the Upper Peninsula because they resembled a pasty from this region, which borders Lake Ladoga and the White Sea and is divided between Russia and Finland.

ANSWER: **Karelia** [or **Karjala** or **Karélija** or **Korjela** or **Karelen**]

[10h] The Jesuit missionary Jacques Marquette (“mar-KET”) founded this second-largest city of the Upper Peninsula. This city’s namesake Soo Locks span a river that separates it from a larger, identically named city in Ontario.

ANSWER: **Sault Ste. Marie** (“soo saint muh-REE”)

<Geography>

11. Name these directors of non-English-language films titled for mothers, for 10 points each.

[10e] A woman calmly dances in a field in the opening of this director’s film *Mother*. This Korean director described the “one-inch tall barrier of subtitles” in an Oscar speech after winning Best Picture for *Parasite*.

ANSWER: **Bong** Joon-ho

[10m] Two teenage boys go on a raunchy road trip with a middle-aged woman in this director’s film *Y tu mamá también* (“ee too mah-MAH tahm-b’YEN”). This director drew on his childhood for a 2018 film about an Indigenous housekeeper.

ANSWER: Alfonso **Cuarón** (“kwah-ROHN”) [or Alfonso **Cuarón** Orozco; prompt on Orozco] (The second film is *Roma*.)

[10h] In this director’s film *Mamma Roma*, a former sex worker hides her profession from her son. This gay Italian director’s staunch anti-Fascist views and profane films like *Salò* contributed to his mysterious unsolved murder.

ANSWER: Pier Paolo **Pasolini**

<Other Fine Arts (Film)>

12. Brendan Koerner’s book about the “golden age” of this crime includes the story of Raffaele Minichiello, whom the Italian government refused to extradite after he committed this crime. For 10 points each:

[10m] Name this crime, which was the subject of an unsolved FBI case from 1971 codenamed NORJAK. A description is acceptable.

ANSWER: **hijack**ing a plane [or **skyjack**ing; accept **air piracy**; accept descriptions such as **commandeer**ing a plane; reject “carjacking” or “hijacking a car”] (The case was the D. B. Cooper hijacking.)

[10e] Many American hijackers hoped to obtain passage to this country. Soviet missiles stationed in this country almost sparked international war during the Kennedy administration.

ANSWER: **Cuba** [or Republic of **Cuba** or República de **Cuba**; accept **Cuban** Missile Crisis]

[10h] Koerner also wrote about Roger Holder and Cathy Kerkow’s 1972 hijacking to free this activist from jail. This activist went into hiding after being accused by the FBI of participating in George Jackson’s jailbreak from San Quentin Prison.

ANSWER: Angela **Davis** [or Angela Yvonne **Davis**]

<American History>

13. “In the beginning was the Word, and the Word was with God, and the Word was God.” For 10 points each:

[10e] That quote is the King James translation of the first verse of the first chapter of what New Testament book? This non-synoptic and final gospel relates different events than the first three.

ANSWER: Gospel of **John** [or Gospel According To Saint **John** or Euangélion katà **Iōánnēn**]

[10m] “The Word” is the usual English translation of this Greek word, which in a biblical context is usually interpreted to refer metaphorically to the pre-existent form of Jesus Christ.

ANSWER: **logos**

[10h] This theologian argued that the Word emanated from, but is inseparable from, the Father. This theologian attacked Greek philosophy’s place in Christian thinking by asking “what has Athens to do with Jerusalem?”

ANSWER: **Tertullian** [or Quintus Septimius Florens **Tertullian**us]

<Religion>

14. After this character delivers a punch as “quick as the flame from a discharged cannon at night,” his victim’s body is compared to “handling a dead snake.” For 10 points each:

[10m] Name this “handsome sailor” who kills the master-at-arms John Claggart after being falsely accused of plotting a mutiny in a posthumously published novel titled for him.

ANSWER: **Billy** Budd [or Billy **Budd**; accept ***Billy*** *Budd, Sailor (An Inside Narrative)*]

[10e] After the title character is hanged for murdering Claggart, the “spar from which he was suspended” is compared to the Cross in this author’s novel *Billy Budd*. This author also wrote *Moby-Dick*.

ANSWER: Herman **Melville**

[10h] Melville used a quote from the Book of Job to open this section of *Moby-Dick*, which was inexplicably excluded from the first British edition of the novel, leading to its initial poor reviews.

ANSWER: the **Epilogue** [prompt on the last section]  
<American Literature>

15. A “second” theorem of the same name extends this theorem to the Lie (“lee”) algebra of infinitesimal symmetries of an action functional. For 10 points each:

[10m] Name this theorem named for a German mathematician, which states if a system has a differentiable symmetry, then there is a corresponding conservation law for the system.

ANSWER: **Noether**’s (“NUR-turz”) theorem [or **Noether**’s first theorem; accept **Noether**’s second theorem]

[10e] Noether’s theorem shows that the conservation of energy corresponds to a symmetry in this quantity. By definition, constants of motion do not depend on this quantity, whose units include nanoseconds.

ANSWER: **time** [accept **time** translation symmetry]

[10h] As Noether’s theorem makes use of the classical equations of motion, it is described as being “on” this construct. Virtual particles are described as “off” this construct, as they violate the energy-momentum relation.

ANSWER: mass **shell** [accept on **shell** or off **shell**; accept mass **hyperboloid**]

<Physics>

16. This musical school included the Greek composer Nikos Skalkottas, who wrote the overture *The Return of Ulysses* and *36 Greek Dances*. For 10 points each:

[10m] Name this school whose music was featured at the 1913 “Skandalkonzert,” where one of the organizers slapped a concertgoer. Earlier that year, a composer from this musical school premiered the piece *Gurrelieder*.

ANSWER: **Second Viennese** School [or **Zweite Wiener** Schule; or **New Viennese** School or **Neue Wiener** Schule; prompt on Viennese School or Wiener Schule]

[10e] Skalkottas studied composition under this Austrian composer and founder of the Second Viennese School. This pioneer of twelve-tone technique wrote *Gurrelieder* and the sextet *Transfigured Night*.

ANSWER: Arnold **Schoenberg** [or Arnold **Schönberg**]

[10h] This composer’s *Six Pieces for Orchestra* were also premiered at the *Skandalkonzert*. This composer used a “derived row” in his *Concerto for Nine Instruments*.

ANSWER: Anton **Webern** [Anton Friedrich Wilhelm von **Webern**; reject “von Weber”]

<Classical Music>

17. The generalization of the extreme value theorem to topological spaces relies on the fact that this property of a space is preserved by continuous functions. For 10 points each:

[10m] Name this property of spaces that have a finite subcover for any given cover. In Euclidean (“yoo-CLID-ee-un”) spaces, this property is equivalent to being closed and bounded.

ANSWER: **compact**ness

[10e] If the topologies in a set are all compact, a topology named for the “Cartesian” form of this operation is also compact. Vectors are acted on by the “dot” and “cross” types of this operation.

ANSWER: **product**s [accept dot **product** or scalar **product**; accept cross **product**; accept Cartesian **product**; accept **product** topology or **product** space]

[10h] Product topologies preserve compactness according to a theorem named for this Russian mathematician, who also names the “T\_3.5” (“T three-and-a-half”) separation axiom.

ANSWER: Andrey Nikolayevich **Tikhonov** (“TICK-uh-nov”) [accept **Tychonoff**, **Tychonov**, **Tihonov**, or **Tichonov** in place of “Tikhonov”; accept **Tychonoff**’s theorem]

<Other Science>

18. During this decade, the Gay Liberation Front planned what is often considered the United Kingdom’s first official pride parade. For 10 points each:

[10m] Identify this decade, during which *The Sun* printed the headline “Crisis? What Crisis?” in response to a series of crippling strikes termed the “Winter of Discontent.”

ANSWER: 19**70**s [or the **Seventies**]

[10e] Marchers during the 1984 pride parade in London solicited donations for workers in this industry who were striking under the leadership of Arthur Scargill. Workers in this industry often suffer from “black lung” disease.

ANSWER: coal **miner**s [or coal **mining** or **mine**s; or **coal** industry or **collieries**; accept UK **miner**s’ strike]

[10h] This politician argued against anti-gay discrimination in the 1983 Labour Party manifesto, which was called “history’s longest suicide note” due to the disastrous defeat his party faced in elections that year.

ANSWER: Michael **Foot** [or Michael Mackintosh **Foot**]

<European History>

19. In a novel by this author, Christopher Chubb invents the fictional working-class poet Bob McCorkle. For 10 points each:

[10m] Name this author of *My Life as a Fake*. In another novel by this author, two gamblers make a bet over transporting a glass church 400 kilometers through New South Wales.

ANSWER: Peter **Carey** [or Peter Philip **Carey**] (The second novel is *Oscar and Lucinda*.)

[10h] Carey’s novel *My Life as a Fake* was inspired by a hoax in which James McAuley and Harold Stewart mocked an Australian journal by successfully submitting deliberately bad poems attributed to this fictitious author.

ANSWER: Ern **Malley** [or Ernest Lalor **Malley**]

[10e] The Ern Malley poems were published by a journal named for “Angry” examples of these birds. A publisher named for this bird merged with Random House in 2013 and publishes a paperback “Classics” series.

ANSWER: **penguin**s [accept **Penguin** Books or **Penguin** Random House or **Penguin** Classics; accept *Angry* ***Penguin****s*]

<World Literature>

20. This book argues that exchange values are determined by the socially necessary labor time. For 10 points each:

[10m] Name this book in which the first chapter of the first volume discusses the rise of “commodity fetishism.”

ANSWER: *Das* ***Kapital*** [or ***Capital***; or *Das* ***Kapital****: Kritik der politischen Ökonomie* or ***Capital****: Critique of Political Economy*]

[10e] This economist discussed his theories of surplus value and surplus labor in *Das Kapital*.

ANSWER: Karl **Marx** [or Karl Heinrich **Marx**]

[10] In *Das Kapital*, Marx claims that technological innovation leads to a tendency of this quantity to fall. Okishio’s (“oh-KISH-ee-oh’s”) theorem contradicted Marx by showing that, in certain cases, an increase in this quantity for one capitalist caused it to increase for [emphasize] *all* capitalists.

ANSWER: **rate** of **profit** [or **profit rate**; prompt on profit]

<Social Science>

TB. In the 1970s, debate erupted among this city’s white and Black residents about whether its Zulu name, eThekwini (“eh-tek-WEE-nee”), meant “in the bay” or “thing with one testicle,” with the latter referring to the bay’s shape. For 10 points each:

[10m] Name this city that was originally called Port Natal (“nuh-TAHL”). This city, which contains one of the world’s largest Indian diaspora populations, is the third-most populous in South Africa.

ANSWER: **Durban** [or **eZibubulungwini**]

[10h] The first post-apartheid name change was the renaming of this province’s city of Verwoerdburg (“fur-VOORD-boorg”) to Centurion. This smallest province by area contains Pretoria, which has remained indecisive about changing its name to Tshwane (“ch’WAH-nay”).

ANSWER: **Gauteng** (“khow-TENG”) [or **eGoli**; or **Gauteng/eXilungwini**; or **iRhawuti**; or **I-Gauteng**]

[10e] In 2006, the name of Johannesburg’s suburb of Sophiatown was restored 52 years after whites-only rezoning resulted in its name meaning “triumph” in this language that developed from the Dutch spoken by European settlers.

ANSWER: **Afrikaans**

<Geography>