

2016 Terrapin XXIX: Lead Can't Penetrate Steele

Packet 4

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Tossups

1. **The time-dependence of the real and imaginary parts of this quantity can be depicted using a Cole–Cole plot, which describes how this quantity undergoes Debye relaxation to its normal value when an applied field is removed. Materials are classified as having “high” or “low” values of this quantity depending on how their properties compare to silicon dioxide. A material’s absolute value for this quantity divided by the standard value for this quantity equals one plus the electric (*) susceptibility. This quantity increases drastically when the breakdown voltage is exceeded. This quantity is also called relative permittivity. For 10 points, name this quantity, symbolized lowercase kappa, that multiplies the capacitance of a parallel-plate capacitor when an insulator is placed between the terminals.**

ANSWER: dielectric constant [accept relative permittivity until read; prompt on lowercase kappa until read]

<SR Physics>

2. **As part of the “shaking of the house” before this holiday, families clean their houses and replace old items. On the last Wednesday before this holiday, a festival of fire is celebrated by lighting and jumping over bonfires. In preparation for this holiday, a plate of sprouting grains is prepared for display alongside six other items whose names begin with the same letter; those items, which include *sabzeh*, are the (*) *haft seen*. In the Bahá’í Faith, this holiday marks the end of the Nineteen Day Fast. This holiday is celebrated on the day of the vernal equinox, and unlike the six festivals known as the *gahambars*, this originally-Zoroastrian holiday continued to be celebrated after the Islamic conquest of Persia. For 10 points, name this Iranian holiday that marks the New Year.**

ANSWER: Nowruz [prompt on Iranian New Year or Persian New Year until “New Year” is read]

<WC Other (Academic)>

3. **Two characters in this play argue over whether one owned a “brown stinkwood top” as a child, and whether a song contained the lyric “Lullabye baby, you’ll get to the top.” In a monologue from this play, a man offers his mother a butterfly that he claims to have caught while driving a car at 90 miles per hour. In this play, an alarm clock reminds a character to prepare a salt bath for another man, who has foot sores from his work as a gatekeeper at a park. The (*) protagonists of this play spend their savings on a suit so that one can go on a date with a woman from Port Elizabeth, but she gets engaged and does not visit. The pen pal of a character in this play, Ethel Lange, causes tension with his lighter-skinned brother. For 10 points, name this play by Athol Fugard about the brothers Morris and Zachariah.**

ANSWER: Blood Knot

<ES Other Literature>

4. In Eduard von Hartmann's metaphysics, this concept is the irrational pole of the Unconscious. Because architecture and landscaping represent low grades of this concept's objectification, another philosopher placed them at the bottom of the artistic hierarchy, while putting music at the top because it directly expresses this concept. With some qualifications, that philosopher usually identified this concept with the (*) Kantian thing-in-itself. That philosopher claimed that this concept was a "blind striving" that could only be transcended by compassion, artistic contemplation, and ascetic self-denial. Nietzsche's idea of a form of this concept directed towards power was inspired by an 1819 treatise partly titled for it that draws on the Upanishads. For 10 points, the world consists of what concept and representation according to Arthur Schopenhauer's magnum opus? ANSWER: will [or will-to-life; or will-to-power; or macht; do not accept or prompt on "free will"; prompt on the world or life; prompt on the thing-in-itself or ding an sich; prompt on related words like motive or striving]
<JB Philosophy>

5. In a novel set in this city, a character hallucinates a Persian man named Shishnarfne, whose name is the reverse of *enfranshish*, a made-up word featured in his nightmares about Mongolians. In that novel set in this city, the protagonist accosts Angel Peri while wearing a red domino costume and is given a bomb in a sardine tin with which to kill his father. In this city, a character imagines putting a shivering little girl in his bed, then blows his brains out in front of a soldier. In that novel set in this city, a (*) lawyer plants money on a young woman at a funeral hosted by her mother, the widow of Marmeladov. Andrei Bely wrote a novel titled for this city, where the protagonist of another novel encounters the nihilist Svidrigailov and the prostitute Sonya. For 10 points, name this city where Raskolnikov murders a pawnbroker in Dostoyevsky's *Crime and Punishment*. ANSWER: Saint Petersburg [or Sankt-Peterburg]
<JB European Literature>

6. One cause of this policy was a famine whose victims were aided by the American Relief Association and the church-run Pomgol committee. The "who-whom?" slogan originates from a speech justifying this policy, which was introduced along with a Ban on Factions. Under this policy, industrial prices rose and agricultural prices fell during a period called the "scissors crisis." This policy's namesake "men" often opened (*) casinos and nightclubs. This policy was championed by members of the Right Opposition such as Nikolai Bukharin. A sailor's uprising at Kronstadt is credited as one of the reasons for this policy, which replaced War Communism. For 10 points, name this policy by which Vladimir Lenin reintroduced some elements of capitalism to the Soviet economy. ANSWER: New Economic Policy [or New Economic Policy; or Novaya Ekonomicheskaya Politika]
<JB European History>

7. An artist from this country had migrant workers stand up to their chests in water for his piece *To Raise the Water Level of a Fishpond*. An artist from this country included four hundred books filled with nonsensical symbols in *A Book From the Sky*. Several works by an artist from here involve antique vases, including one on which he painted the word "Coca-Cola" and one which he photographed himself dropping. In Britain, that artist from this country covered the floor of Turbine Hall at the (*) Tate Modern with millions of porcelain sunflower seeds. The best-known medieval painting from this country depicts a festival celebration along a river. A tomb complex in this country is home to thousands of sculptures of unique chariots, horses, and soldiers. For 10 points, name this country home to the terracotta army and artists such as Zhang Huan, Xu Bing, and Ai Weiwei. ANSWER: China [or Zhongguo]
<JB Other Arts (Visual)>

8. Life Technologies offers a kit called mirVana that isolates small examples of these molecules. The “fill and lock” procedure begins a direct method on these molecules; that method’s results can be mapped with TopHat. During laboratory purifications, diethylpyrocarbonate is used to prevent the degradation of these molecules by enzymes. When using a spectrophotometer to determine the purity of a solution of these molecules, one should target a value of 2 for the (*) A260/280 ratio. These molecules are used to *generate* “libraries” of complementary fragments using RT enzymes. These molecules, which contain a hydroxyl group in the 2-prime position of their 5-carbon sugar, comprise the structure of the ribosome and link gene to protein via translation. For 10 points, name these typically single-stranded nucleic acids that contain uracil.

ANSWER: RNAs [or ribonucleic acids; accept more specific types of RNA such as mRNA or tRNA]

<SY Biology>

9. A character in this novel tries to get the “three pretty girls” into his honors course while excluding a mustached student who often asks about the syllabus, Michie. In this novel, the protagonist pretends to be named Barclay to steal a taxi, and pretends to be a reporter from the *Evening Post* to interview an artist. The protagonist in this novel uses a razor to cut out the burnt sections of his bedsheets after falling asleep with a (*) lit cigarette. After her boyfriend Catchpole dumps her in this novel, Margaret Peel pretends to attempt suicide. The title character of this novel is offered a job by Julius Gore-Urquhart and leaves with Christine Callaghan after losing his job by giving a drunken lecture on “Merrie England.” For 10 points, name this novel about history professor James Dixon by Kingsley Amis.

ANSWER: Lucky Jim

<ES British Literature>

10. The Korean king Jumong used this skill to summon a bridge of turtles in order to cross a river. The wife of Emperor Jimmu was born when a red object used in this activity transformed into a god and impregnated her mother. A hero with this skill was killed by his jealous student with a peachwood club. In some stories, the wife of that hero with this skill became a toad after (*) drinking an elixir of immortality and floating to the moon. That hero with this skill used it to destroy nine of the ten suns which were withering the world. This skill of Hòu Yì is shared in Greek myth by a man who was abandoned on Lemnos after getting bit by a snake; that man was named Philoctetes. For 10 points, identify this skill that Cupid uses to give people romantic desire.

ANSWER: archery [or using a bow and arrow; or shooting arrows]

<JB Mythology>

11. This man’s government lost popularity due to his namesake pro-Anglican Education Act and allegations that Chinese slaves were being used in South African gold mines. This man’s brother Gerald coined the phrase “killing Home Rule with kindness,” which is often used to describe his policies as Chief Secretary of Ireland. This man recommended the term “Commonwealth of Nations” over “British Empire” in a namesake 1927 report. A statement (*) issued by this man contradicted the earlier McMahon–Hussein correspondence. This man succeeded Lord Salisbury as prime minister, and as Foreign Secretary he was influenced by Chaim Weizmann (“KHA-eem VYTES-mon”) to promise a “national home” in a letter to Walter Rothschild. For 10 points, name this British politician whose namesake 1917 “Declaration” supported a Jewish state in Palestine.

ANSWER: Arthur James Balfour, 1st Earl of Balfour

<JB European History>

12. The proposed Darwin and TPF projects would have used this technique to detect exoplanets. Strong signals can be selectively blocked in this technique in a process called “nulling.” One can compensate for geometric delay in this technique using delay lines. The distance between two signal collectors in this technique is referred to as the “baseline.” This technique allows an array of telescopes to act as a (*) single telescope with super-high resolution. A beam splitter followed by two perpendicular arms is a commonly-used design in this technique, which was used to obtain evidence of gravitational waves by LIGO. For 10 points, the Michelson design is typically used in what technique that observes “fringes” formed by two superimposed light waves?

ANSWER: interferometry [accept word forms like interferometer; accept nulling interferometry; accept VLBI or Very Long Baseline Interferometry]

<BB Other Science (Astronomy)>

13. A man threatens a nude woman with a dagger in this artist’s late work *Tarquin and Lucretia*. In Velázquez’s *Las Hilanderas*, Arachne’s tapestry is a copy of a painting by this artist. A bucket is being brought for the blood being lapped by a dog in a painting by this artist, which contains a self-portrait as Midas watching Apollo kneel beside the upside-down title figure. As part of his “poesies” series for Philip II, this artist made a two-part depiction of the Diana and Actaeon story. In an entry in that series, this artist painted a (*) cherub riding a fish looking on as the title woman clings to the horn of a white bull. This artist of *The Flaying of Marsyas* painted a maid looking in a chest behind a bed where a little dog sleeps near a reclining nude woman. For 10 points, name this Venetian artist of *The Rape of Europa* and *The Venus of Urbino*.

ANSWER: Titian [or Tiziano Vecellio]

<SY Painting>

14. To indicate the start date of a certain event, runners traveled between these places distributing knotted yucca ropes. Governor Trevino ordered 47 residents of these places whipped for practicing witchcraft. A horrifying massacre targeting one of these places ended with its surviving male residents having their right feet cut off, and the burning of the *kiva* rooms in that place of this type, Acoma. Diego de Vargas’s so-called “bloodless” reconquest reversed the results of a (*) revolt named for this type of structure, which was led by the priest Popé. While searching for cities of gold, Francesco de Coronado conquered one of these places called Cibola. In addition to pithouses and cliff dwellings, the ancient Anasazi people dwelled in these complexes. For 10 points, name these southwestern Native American communal residences that were made of adobe.

ANSWER: pueblos [prompt on Spanish missions]

<JB American History>

15. This poet asked “Where I shall find / No need for scholarly nonchalance or looks” in a poem spoken by a “princess of properness.” This poet claimed “No man can give me any word but Wait” in “My dreams, my works, must wait till after hell.” In a poem by this author, the speaker wishes to “wear the brave stockings of night-black lace / And strut down the streets with paint on my face.” This poet of “Song of the Front Yard” asked “Though why should I whine, / Whine that the crime was other than mine?” in a poem that begins (*) “Abortions will not let you forget.” In a poem by this author, “Dinner is a casual affair” for “Two who are Mostly Good.” This poet of “The Mother” penned the lines “We / Jazz June. We / Die soon” in a short poem about poolplayers. For 10 points, name this poet of “The Bean Eaters” and “We Real Cool.”

ANSWER: Gwendolyn Brooks

<ES American Literature>

16. Either the Claisen reaction or this reaction is used to form the initial ring in a polyketide compound. A common introductory organic chemistry lab experiment involves using this reaction to synthesize chalcones. An enzyme named for this reaction converts fructose 1,6-diphosphate to DHAP and G3P during glycolysis. This reaction proceeds via a chair-shaped transition state according to the (*) Zimmerman–Traxler model. This reaction forms the ring in the Robinson annulation. Under base catalysis, this reaction contains an addition step where an enolate attacks a carbonyl, followed by an elimination step where water is removed to form an alpha-beta unsaturated ketone. For 10 points, name this condensation reaction named for the two functional groups present in its intermediate.

ANSWER: aldol reaction [accept aldol condensation or aldol addition; accept aldolase]

<SR Chemistry>

17. This practice is less common on the west side of a division that stretches from Trieste to St. Petersburg, the Hajnal (“HYE-nal”) line. Kathleen Gough attempted to expand the definition of this practice to include the Nayar (“NYE-ur”) people’s form of it, in which pre-pubescent girls participate in the tāli-tying ritual. The “walking” form of this practice, which consists of night visits, is practiced exclusively by the Mosuo people of China. This practice can have residence patterns such as ambilocal and bilocal. E. E. (*) Evans-Pritchard studied a form of this practice among the Nuer in which a dead man’s brother acts as a stand-in, its “ghost” variety. This practice is held to be more important than descent for creating kinship systems in Claude Lévi-Strauss’s alliance theory. For 10 points, what practice can be polygynous or polyandrous if more than two people are involved?

ANSWER: marriage [or weddings; or nuptiality; or equivalents of having children until “definition” is read; prompt on unions]

<JB Social Science>

18. Gān Yīng’s account of this state describes a mistaken belief that this state produced a textile from the down of “water sheep.” That account describes how Ānxī thwarted this state’s attempts to send out envoys, and calls this state Dàqín (“dah-chin”). On the behalf of this empire, two monks hid mulberry seeds and silkworm eggs in their walking sticks to steal the secret of making silk. A monument that commemorates the propagation of a “luminous (*) religion” originating in this empire was erected during the Táng dynasty. That monument, the Nestorian Stele, is inscribed with several names in Syriac. The ancient Chinese mistakenly thought that this empire’s capital was Ān-tū, or Antioch. For 10 points, name this empire that was on the western end of the Silk Road and was based in Italy.

ANSWER: Roman Empire [or Rome; accept Byzantine Empire or Byzantium; accept Dàqín until read]

<WC World History>

19. Bartók’s 1926 piece in this genre opens with a low G-sharp octave, A–A-sharp dyad, and many Bs. A piece in this genre ends in a soft A minor, F major, B major cadence. A piece in this genre opens with a long trill on low E over a D-sharp–A tremolo, fast glissandi, then a languid 5/8 section. Beethoven’s fate motif is quoted in the Rückblick intermezzo from Brahms’s five-movement piece in this genre. Two movements, Foreboding and Death, exist of Janáček’s piece in this genre, *I. X. 1905*. Medtner’s *Night Wind* and all of (*) Scriabin’s pieces in this genre after No. 5 have one movement, like Liszt’s B minor one in double-function form. A two-octave A major arpeggio and alternating Largo and Allegro sections open a piece in this genre called *Tempest*. Another opens with repeated G-sharp C-sharp E triplets on the sustain pedal. For 10 points, name this genre of 32 solo Beethoven pieces, such as *Pathétique* and *Moonlight*.

ANSWER: piano sonata [prompt on sonata]

<OL Music>

20. A divination ritual that was performed by this ethnic group to determine if a child was legitimate used objects inscribed with the words “pure” and “consociated alien.” This ethnic group worshipped three deities that were referred to as “exalted cranes” in an exhortation to seek the intercession of those deities. In a divination ritual that was performed by this ethnic group, seven arrows were thrown before the statue of one of their gods; that god of the moon was named (*) Hubal. Three of this ethnic group’s goddesses were Lat, ‘Uzza, and Manat, whose worship was encouraged by the apocryphal Satanic Verses. For 10 points, name this ethnic group that once worshipped many gods whose idols were kept inside the Kaaba before the revelations of Muhammad.

ANSWER: Arabs [do not accept or prompt on “Muslims”]

<WC Religion>

Bonuses

1. In a 1999 interview with *Time* magazine, the founder of this religion claimed that aliens introduced technologies like computers and airplanes, and aim to replace humanity through human cloning. For 10 points each:

[10] Name this recent Chinese religion founded by a *qigong* practitioner, which became persecuted by the Chinese government after its members protested outside the Communist Party's headquarters at Zhongnanhai.

ANSWER: **Falun Gong** [or **Falun Dafa**]

[10] This *qigong* practitioner founded Falun Gong. He was accused of changing his birthday to align it with the birthday of Shakyamuni Buddha.

ANSWER: **Li** Hongzhi

[10] The name Falun Gong literally refers to the "dharma" one of these objects. A type of these objects used in Tibetan Buddhism is inscribed with mantras like Om Mani Padme Hum.

ANSWER: **wheel** [accept dharma **wheel** or prayer **wheel**]

<WC Religion>

2. This character reprimands the Archbishop of York for swearing when he accuses her of Lollardy during an interrogation. For 10 points each:

[10] Name this woman who refers to herself as "this creature" throughout an autobiography in which her visions of Christ prompt her to live celibately with her husband and pilgrimage to Jerusalem.

ANSWER: Margery **Kempe**

[10] Sarah Salih argued that the *Book of Margery Kempe* inspired the Digby miracle plays. The genre of miracle plays is similar to this other medieval theatrical genre, which depicted events from the Bible.

ANSWER: **mystery** plays

[10] Another work of medieval literature by a supposedly illiterate author was the poem of this type composed by the cowherd Caedmon. William Billings's "Africa" and John Newton's "Amazing Grace" are poems of this type, which are typically set to music.

ANSWER: **hymns**

<JB British Literature>

3. The taqsīm ("tuck-SEEM"), an introductory genre from instrumental Arabic music, begins with a long, slow, solo improvisation on the first few notes of one of these "scales" before modulating to others. For 10 points each:

[10] Name these melodic modes of Arabic, Turkish, or Persian music usually made of two tetrachords, like Rāst or Bayātī, that may use quarter tones. Mizrahi Jews use different ones based on the mood of a week's Torah reading.

ANSWER: **maqām** ("muh-COM") [or **maqāmāt**; accept **makam** or **makamlar**; accept Weekly **Maqām**]

[10] Taqsīm may be accompanied by this effect in which a bass note is continually sustained during a piece. A sitar, hurdy-gurdy, or bagpipes may have dedicated parts for this effect, and it is produced by a shruti box or didgeridoo.

ANSWER: **drone** [do not accept "pedal," "ground bass," or "ostinato"]

[10] Chopin repeated low G-flat D-flat fifths to imitate drones in his B-flat major Opus 7 No. 1 piece in this genre. His many stylized takes on this 3/4 Polish dance often use the Lydian or Phrygian mode and have a dotted first beat followed by two strong quarter notes.

ANSWER: **mazurka** [accept **mazurek** or **mazurki**]

<OL Music>

4. Answer the following about the history of the production of certain agricultural commodities in Africa, for 10 points each.

[10] As the Ottoman viceroy of Egypt, Muhammad Ali introduced the cultivation of this crop, which became Egypt's main export due to a shortage of this crop caused by the American Civil War.

ANSWER: cotton

[10] Rubber was the main export of Leopold II's Congo Free State, where soldiers from this military group killed workers who failed to collect required rubber quotas and cut off their right hands as trophies.

ANSWER: Force Publique [or Public Force; or FP]

[10] Following World War II, John Strachey, the British food minister, authorized a failed scheme to cultivate this crop in Tanganyika. That scheme saw unsuccessful attempts to convert Sherman tanks into tractors called Shervicks.

ANSWER: peanuts [or groundnuts; prompt on nuts]

<WC World History>

5. These graphs can be produced for a given cohort using the related life table. For 10 points each:

[10] Identify these graphs whose type I ("one") variety is exhibited by most human populations. These graphs plot the logarithm of one minus the mortality rate against lifespan.

ANSWER: survivorship curve

[10] Humans and other species that follow type I survivorship curves are characterized by this kind of selection, which consists of relatively few offspring that have a high probability of surviving to adulthood. It is contrasted with *r* selection and named for the letter that denotes carrying capacity.

ANSWER: K selection

[10] In one of many so-called "life history tradeoffs," organisms can give birth to a few offspring periodically over the course of their lives, a strategy called "iteroparous," or give birth to many offspring all at once, a strategy referred to by this word.

ANSWER: semelparous [accept semelparity]

<SR Biology>

6. Gilbert and Gubar argued that 19th-century fiction portrayed women as either "angels" or "monsters" in a study titled for the "Madwoman" in this place. For 10 points each:

[10] Identify this location in Thornfield where Bertha Mason is kept by her first husband, Rochester, before burning down the house.

ANSWER: the attic [prompt on upstairs]

[10] Bertha Mason is the "madwoman in the attic" in *Jane Eyre*, a novel by a member of this family named Charlotte.

ANSWER: Brontë

[10] Bertha's appearance is presaged when Jane dreams of a purple-faced, vampiric woman taking this object from her, putting it on her own head, then tearing it and throwing it to the ground.

ANSWER: Jane Eyre's bridal veil

<JB Other Literature>

7. The Youthbuilders group from Harlem Public School 43 distributed posters to protest the segregation of this thing. For 10 points each:

[10] Name this resource whose segregation prompted Charles R. Drew's resignation from one post in 1941.

ANSWER: **blood** [or blood **plasma**]

[10] Drew, a pioneer of blood banks and transfusions, resigned from this organization in response to its segregation of blood donations. Clara Barton founded the American branch of this humanitarian organization.

ANSWER: **Red Cross**

[10] This leader of the Brotherhood of Sleeping Car Porters formed the March on Washington Movement to protest segregation in the Armed Forces and defense industry during World War II.

ANSWER: Asa Philip **Randolph**

<JB American History>

8. This thinker introduced a dilemma that asks whether physicalism should be defined in terms of our current understanding of nature or some future, ideal physics. For 10 points each:

[10] Name this thinker who pointed out the paradox that pointing to non-black non-ravens, such as white shoes, seems to provide confirmation that all ravens are black.

ANSWER: Carl Gustav **Hempel**

[10] Hempel developed a model of explanation that is named for statistics and this method of reasoning. In this method of reasoning, a general conclusion is developed from specific data.

ANSWER: **induction** [or **inductive** reasoning]

[10] Nelson Goodman's "A New Riddle of Induction" addresses problems with Hempel's theory of confirmation by inventing two properties, which blue and green objects switch having after a future time t . Name either property.

ANSWER: **grue** OR **bleen**

<JB Philosophy>

9. The real projective plane is a two-dimensional one of these things that cannot be embedded into three-dimensional space without intersecting itself. For 10 points each:

[10] Name these objects that can be defined using charts and atlases. These objects are defined as topological spaces that resemble Euclidean space locally around every point.

ANSWER: **manifolds**

[10] The closed ball is a manifold with one of these entities, where this entity, represented by a curly d , is the sphere, since the sphere is the set of points in the closure of the ball but not in the interior of the ball. This type of "value problem" consists of a differential equation to be solved under constraints referred to as this type of "conditions."

ANSWER: **boundary** [accept **boundary value** problem or **boundary** conditions]

[10] This type of manifold is smooth and defined with a closed nondegenerate 2-form. In classical mechanics, this type of manifold generalizes the concept of phase space.

ANSWER: **symplectic** manifold

<SR Other Science (Math)>

10. Albert Marx had the insight to record a concert in this location, which later became the first double album release. For 10 points each:

[10] Name this location of a famous 1938 concert that “legitimized” jazz. Walter Damrosch conducted the premieres of Gershwin’s *An American in Paris* and *Concerto in F* at this concert venue.

ANSWER: **Carnegie Hall**

[10] Big band leaders Woody Herman, Artie Shaw, and Benny Goodman all played this single-reed instrument. It opens Gershwin’s *Rhapsody in Blue* with a trill and drawn-out glissando.

ANSWER: **clarinet** [accept B-flat **clarinet** or soprano **clarinet**]

[10] The concert popularized this recently-composed 12-bar blues standard featuring a rhythm intro that modulates from F to D-flat, then has a series of solos and overlapping riffs. The Count Basie Orchestra ended concerts with it.

ANSWER: **“One O’Clock Jump”**

<OL Other Arts (Jazz)>

11. In a poem from this school, the speaker asks “shall we & why not, buy a goddamn big car,” but is told “drive... for christ’s sake, look out where yr going.” For 10 points each:

[10] Name this school of poetry to which the author of “I Know a Man,” Robert Creeley, belonged. This school of poetry was led by an advocate of “projective verse,” Charles Olson.

ANSWER: **Black Mountain** poets

[10] Earlier in car-related American poetry history, this poet proposed crazy names such as the “Mongoose Civique” and “Utopian Turtletop” for a new Ford model. This author’s best-known poem begins “I, too, dislike it.”

ANSWER: Marianne **Moore** (The poem is “Poetry.”)

[10] This poet wrote of Henry Ford that “my strophes are as individual as his automobiles” in his poem “America.” This Beat Generation poet also described the “best minds of my generation” in “Howl.”

ANSWER: Allen **Ginsberg**

<JB American Literature>

12. A holder of this title named Joseph Suss-Oppenhimer was executed after the death of his patron, Karl Alexander of Württemberg. For 10 points each:

[10] Identify this position in the governments of many German princes and Central European states, whose holders usually served as moneylenders and financial advisers in exchange for special privileges.

ANSWER: **court Jew** [or **court factor**; or **Hofjude**; or **Hoffaktor**; prompt on **Jews**]

[10] This Holy Roman Emperor ennobled his court Jew Jacob Bassevi. This successor of Matthias returned land to Catholics by the Edict of Restitution and ordered the death of his general Wallenstein during the Thirty Years War.

ANSWER: **Ferdinand II** [prompt on **Ferdinand**]

[10] The founder of this family, Mayer Amschel, served as a court Jew before establishing an independent bank. This Jewish banking family became the richest in the world during the 19th century.

ANSWER: **Rothschild** family

<JB European History>

13. During the Makahiki New Year festival, a “tax canoe” full of gifts to this god was set adrift in the sea, after which spears were thrown at the chieftain. For 10 points each:

[10] Name this god of rainfall who was known by the title “Makua,” or “protector,” who descended to Earth on a rainbow to wed the fertility goddess Ka-iki-lani. Captain James Cook was allegedly believed to be this god.

ANSWER: **Lono** [or **Lono-nui-noho-i-ka-wai**]

[10] Kāne, Kanaloa, Kū, and Lono are the four great gods of these islands, whose hula dance was said to be sacred to the goddess Hi‘iaka.

ANSWER: **Hawai‘i** [or the **Hawai‘ian** Islands; or Mokupuni o **Hawai‘i**]

[10] This Hawai‘ian goddess of fire and volcanoes loved her youngest sister Hi‘iaka so much that she kept Hi‘iaka under her armpit.

ANSWER: **Pele**

<AP Mythology>

14. In this theory, stability is determined by the height of the energy barrier, which equals the maximum value of the sum of electrostatic repulsion between double layers and van der Waals attraction between individual particles. For 10 points each:

[10] Name this theory that thus determines the energy barrier required for the substances it models to agglomerate.

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

[10] DLVO theory models the stability of these substances, which consist of particles of one substance dispersed throughout another. Examples of these substances include gels and emulsions.

ANSWER: **colloids**

[10] The electrostatic potential between charged particles in a colloid decreases exponentially with the “screening length” named for this scientist. That same screening length also applies to the E-fields generated by individual charges in plasmas.

ANSWER: Peter **Debye** (“deh-BYE”)

<SR Chemistry>

15. Answer the following about Christian religious figures profiled by the Venerable Bede. For 10 points each:

[10] Bede wrote verse and prose versions of a hagiography of Saint Cuthbert, a monk who spent time at this island monastery in Northern England. A raid on this abbey in 793 marked the beginning of the Viking Age.

ANSWER: **Lindisfarne**

[10] Bede adopted Paulinus of Nola’s hagiography of Saint Felix of Nola, who was killed during the namesake persecutions of this non-Diocletian Roman emperor. This man overthrew Philip the Arab and was killed by the Goths at the Battle of Abritus.

ANSWER: Trajan **Decius**

[10] Bede praised a *different* Saint Felix from this region for his efforts to build a school in East Anglia. This French region’s duke Philip the Good regulated the quality of its namesake dark red wine.

ANSWER: **Burgundy** [or **Bourgogne**]

<AP European History>

16. An eight-part poem with this title, its author's longest, is dedicated to Maxime du Camp and opens by imagining a boy playing with maps and globes. For 10 points each:

[10] Name this type of event, which is the last word in the title of a poem that states "Child, Sister, think how sweet to go out there and live together!" and repeats "There, there's only order, beauty: abundant, calm, voluptuous."

ANSWER: voyages [or "The Voyage"; or "Invitation to the Voyage"; prompt on Invitation]

[10] Those poems, "The Voyage," and "Invitation to the Voyage" are from *Les Fleurs du mal* by this French poet, who influenced the Symbolists with his translations of Poe.

ANSWER: Charles Baudelaire

[10] *Les Fleurs du mal* is book-ended by "The Voyage" and by an opening poem addressed to this person, whom Baudelaire calls a "hypocrite," as well as "my brother" and "my double."

ANSWER: the Reader [or *le Lecteur*]

<JB European Literature>

17. A bank's waiting area, rows of sleeping men in a warehouse, and skyscrapers make the three parts of a painting set in this city. For 10 points each:

[10] Name this city, the setting of *Frozen Assets*. *Man at the Crossroads* was painted as a fresco in this city before being destroyed due to its controversial portrayal of Vladimir Lenin.

ANSWER: New York City [or NYC]

[10] Both *Frozen Assets* and *Man at the Crossroads* are paintings by this Mexican muralist, the husband of Frida Kahlo.

ANSWER: Diego Rivera

[10] In this other painting set in New York, Frida Kahlo painted a woman falling out of the Hampshire House Building.

ANSWER: *The Suicide of Dorothy Hale*

<SY Painting>

18. Harvey Carr and John Watson's "kerplunk" experiment found that rats would ignore external stimuli after being trained to find food in one of these structures. For 10 points each:

[10] Identify these structures composed of paths and walls that were often navigated by mice and rats during behaviorist psychology experiments.

ANSWER: mazes [or labyrinths]

[10] Robert Zajonc ("ZYE-unce") found that cockroaches perform worse in a complex maze when this element is added. In the facilitation effect investigated by Zajonc, cockroaches and humans alike perform better on familiar tasks and worse on new ones when this variable is added.

ANSWER: the presence of other people or cockroaches [or having an audience; or mere presence; or being in a social situation; or equivalents of others being present]

[10] A study by Edward Tolman found that rats in a maze engaged in the "latent" form of this process even without receiving the reinforcement of food. Albert Bandura's theory of the "social" type of this process stresses the importance of observation.

ANSWER: learning [prompt on synonyms]

<JB Social Science>

19. Answer some questions about pastoralists and their interaction with the land. For 10 points each:

[10] The example of pastoralists overgrazing a shared pasture was used to illustrate the title concept of this article by Garrett Hardin, which explores how individually rational choices can result in a suboptimal outcome for the group.

ANSWER: “The **Tragedy of the Commons**”

[10] One example of the ecological damage that can be caused by overgrazing is this process, in which drylands become less productive and become more like this process’s namesake type of biome.

ANSWER: **desertification** [accept equivalents like **becoming a desert**]

[10] Because of seasonal temperature variations, some pastoralists engage in this form of nomadism, in which they migrate between mountain pastures in warm seasons, and lower altitudes in cold seasons.

ANSWER: **transhumance** [do not accept “transhumanism,” which is very different]

<WC Other (Geography)>

20. Answer the following about solitons, which are waves that maintain their shape as they move through space at a constant speed. For 10 points each:

[10] Solitons can appear in the solutions of differential equations that *lack* this property, which are notoriously hard to solve analytically. If x and y are solutions to this kind of equation, then a times x plus b times y is also a solution, where a and b are constants.

ANSWER: **linearity**

[10] A common example of a system with soliton solutions is one of these constructs devised by Morikazu Toda. In three dimensions, there are 14 basic types of these systems, which have “orthorhombic” or “monoclinic” types.

ANSWER: crystal **lattices** [accept **Bravais lattices**; prompt on **crystal structures**]

[10] In the 1970s, physicists realized that this equation has soliton solutions, classified as kink, antikink, or breather. This equation states that the d’Alembertian (“dal-ahm-BARE-shin”) of ϕ plus the sine of ϕ equals zero.

ANSWER: **sine-Gordon** equation [do not accept or prompt on “Klein–Gordon equation”]

<SR Physics>