

2016 Terrapin XXIX: Lead Can't Penetrate Steele

Packet 12

Edited by Jordan Brownstein and Billy Busse

Questions by Jordan Brownstein, Billy Busse, Weijia Cheng, Naveed Chowdhury, Justin Hawkins, Will Kunkel, Ophir Lifshitz, Ani Perumalla, Sam Rombro, Jason Shi, Emma Stevens, Tanay Wakhare, and Sarang Yeola

Tossups

1. **A 2010 paper by Matthews and Baker that simplified this idea by using the property of “unmediated causal powers” began a chain of responses published in *Analysis*. A thinker invoked the axiom that anything that is possibly necessary is necessary in a reformulation of this idea using modal logic, which was intended to correct Norman Malcolm’s version of this idea. (*)** Immanuel Kant criticized this idea by arguing that existence is not a predicate. Alvin Plantinga created a version of this argument, the original formulation of which uses the Fool from the Psalms and creates a *reductio ad absurdum* by holding that a “being than which nothing greater can be conceived” would not be the greatest if it existed only in the mind. For 10 points, identify this argument for God’s existence put forth by St. Anselm.

ANSWER: ontological argument [prompt on God’s existence or similar answers]

<JB Philosophy>

2. **Mutations in the SCN9A sodium channel can amplify or completely inhibit this process. It has nothing to do with hair or skin color, but this process occurs differently in people with a mutated melanocortin-1 receptor. Signals involved in this process can be transmitted quickly through A-delta fibers. Neurokinin 1 receives signals of this process from the excitatory neurotransmitters glutamate and (*)** substance P. Some drugs that inhibit this response work by inhibiting mu receptors or cyclooxygenase receptors. Capsaicin can be used to inhibit this response, whose scientific name is nociception. Analgesic drugs that “kill” this sense include NSAIDs and opioids. For 10 points, what sensory response might occur when touching a hot stove?

ANSWER: pain [accept nociception until read, but prompt afterwards]

<SY Biology>

3. **This poem commands “Throw hither all your quaint-enamelled eyes” and “let our frail thoughts dally with false surmise.” This poem laments a “homely, slighted” trade and wonders “Were it not better done, as others use, / To sport with Amaryllis in the shade?” This poem may reference its author’s trip to Italy in its final couplet, in which the speaker twitches his “mantle blue.” In this poem, Phoebus says “Fame is no plant that grows on mortal soil, / Nor in the glistening foil.” This poem’s opening stanza asks “who would not (*)** sing for” its subject, and tells laurels that “I come to pluck your berries harsh and crude.” This poem commands “Look homeward, Angel” and asks “Where were ye, Nymphs, when the remorseless deep / Closed o’er the head of” the title character, a standin for shipwreck-victim Edward King. For 10 points, name this pastoral elegy by John Milton.

ANSWER: “Lycidas”

<ES British Literature>

4. The “blood lineage theory” led this group to refuse membership to those descended from the “black categories.” Members of this group forced a female politician to stand in front of a crowd wearing a necklace of ping pong balls. The son of another politician became a disabled rights activist after being pushed out of a window by this group. This group was encouraged by the (*) article “Bombard the Headquarters” and sought to eliminate the “Four Olds.” After this group was broken up by the PLA, many of its members were sent “down to the countryside.” This group destroyed cultural relics and attacked teachers, officials, and “class enemies.” For 10 points, name this Maoist youth movement during the Cultural Revolution.

ANSWER: Red Guards [or Hóng Wèibīng; prompt on Chinese Communist Party or similar answers]
<JB World History>

5. The first track on this album uses a five-note voicing made by stacking a major third on top of three perfect fourths. The two-chord progression C-major-7 to G-9-sus-4 in the song “Peace Piece” is also featured in the opening of the last track on this album. The composer of that song wrote down 5 scales and the instructions to “play in the sound of these scales.” Another track on this album shifts between (*) D Dorian and E-flat Dorian scales. Wynton Kelly replaces Bill Evans on “Freddie Freeloader,” which appears before “Blue in Green” on this album. Cannonball Adderley and John Coltrane both play saxophone on this album. For 10 points, “So What?” appears on what 1959 modal jazz album by Miles Davis?

ANSWER: Kind of Blue
<SY Other Arts (Jazz)>

6. A character of this name often remembers how a rusty razor-blade in his pocket cut the hand of his mother, who promises him that she will commit suicide if he gets married. A character of this name opines that the residents of a massacred town were fools for not arming themselves after killing a stranger and tying up his “iron horse.” That character of this name is ashamed of his (*) father, a lazy, flute-playing debtor. A character of this name who studied in England on a Progressive Union scholarship is arrested for bribery after paying for the abortion of his girlfriend Clara. A character of this name, whose grandson appears in *No Longer at Ease*, hangs himself after killing the District Commissioner’s messenger and had earlier killed his adopted son Ikemefuna. For 10 points, give this name of the protagonist of Chinua Achebe’s *Things Fall Apart*.

ANSWER: Okonkwo [prompt on Obi]
<JB Other Literature>

7. Evans et al. developed bisoxazoline complexes of this element to catalyze enantioselective Diels–Alder reactions. Penicillamine is a chelating agent used to isolate and remove excess levels of this element in the body. A combination of this element and palladium can catalyze the coupling of terminal alkynes to aryl halides. It’s not silver, but a solution composed of potassium tartrate dissolved in this element’s sulfate is used as a test for reducing sugars. This element is used in the (*) Sonogashira coupling and in Fehling’s solution. Two alkyl groups and a lithium ion bond to this element in a class of reagents useful for carbon–carbon bond formation named for Henry Gilman. When this element is exposed to air for a long time, it forms a green surface layer called verdigris. For 10 points, what element combines with tin to form the alloy bronze?

ANSWER: copper [or Cu]
<SR Chemistry>

8. An artifact from this city may have represented the southern stars through a goddess's headdress of marigolds, and was found in a structure in this city that emulated a mythological "Serpent Mountain." After a snake goddess's son led a rebellion during an idol procession of this city's patron god, his heart was thrown to the spot where this city was founded. A stone at the base of a temple in this city depicts the dismemberment of a moon (*) goddess who led her 400 brothers to decapitate their mother. A blue water pot found in this city was dedicated to a rain god who, after his first wife was kidnapped by a night god, married a jade-skirted goddess. Half of the Templo Mayor in this city was dedicated to a "left-handed hummingbird" god. For 10 points, name this city founded where a snake-eating eagle was perched on a cactus, the Aztec capital.

ANSWER: Tenōchtitlan [prompt on Mexico City]

<AP Mythology>

9. In this play, a woman recalls how her husband stopped playing piano with her because waiting for the next note made him nervous. A servant in this play has the habit of always wiping his hands after he lies. A character in this play relates how she got the hiccups during her first party at her family's estate, Lionnet. In this play Joe Horns is initially blamed for opening a safe-deposit box that contains a baby shoe and a piece of a violin. After returning from (*) Baltimore, a man in this play promises to leave 17 hundred-dollar bills to his servant Addie. Alexandra's father dies in this play while trying to get his medicine from upstairs. In this play, Leo steals Union Pacific bonds from Regina Giddens's husband Horace after he refuses to invest in a cotton mill. For 10 points, name this play about the schemes of the Hubbard family by Lillian Hellman.

ANSWER: *The Little Foxes*

<ES American Literature>

10. For six months in 1964, the federal agency for this industry subjected Oklahoma City to tests known as Operation Bongo II. After the Kelly Act and the later Watres Act were passed, three leaders of this industry met with Postmaster General Walter Brown at the Spoils Conference. Robert Poli demanded a 32-hour work week for certain workers in this industry during a strike of the PATCO union. After President (*) Carter signed a 1978 act deregulating this industry, many of its companies adopted the hub-and-spoke model. Early in his presidency, Ronald Reagan fired striking workers in this industry *en masse*. Defunct companies in this industry include TWA and Pan Am. For 10 points, name this industry that used the Boeing 707.

ANSWER: airline industry [or air transport; or aviation industry; or equivalents]

<JB American History>

11. Paul Milgrom and Robert Weber's 1982 paper on these events established the key result that full information in these events results in higher expected revenue; that result was the linkage principle. The first proof for the revenue equivalence theorem was in a 1961 paper on these events by William Vickrey. That paper also proposes a type of these events named after Vickrey, in which the second (*) price is taken. Since 1994, the FCC has distributed licenses for the electromagnetic spectrum through these events. The Dutch type of these events differs from the English type in that it has a descending format. The winner's curse describes the tendency for winners of these events to overpay. For 10 points, in what events are goods bought and sold through bidding?

ANSWER: auctions

<WC Social Science>

12. A work by this artist references Matthew 19 with the camel in the shadowy doorway on its right side, and shows a turbaned woman stepping up to Christ with her baby. This artist's etchings include a depiction of Christ being hung between the two thieves, and a print of Christ healing the sick named for its original price, a hundred guilders. A painting by this artist which likely depicts Tobit sitting next to a spiral staircase was erroneously titled (*) *Philosopher in Meditation*, and his depiction of Isaac and Rebekah was incorrectly dubbed *The Jewish Bride*. A turbaned king stares in shock at some floating Hebrew letters in this artist's *Belshazzar's Feast*. For 10 points, name this artist whose non-religious paintings include *The Anatomy Lesson* and a painting of Frans Banning Cocq's militia, *The Nightwatch*.

ANSWER: Rembrandt [or Rembrandt Harmenszoon van Rijn]

<JB Painting>

13. When modeling these entities, both the critical deficit and the minimum point of a DO sag curve can be calculated using the Streeter–Phelps equation. By modeling these entities as a plug-flow reactor, one can calculate the spatial variation of biochemical oxygen demand within them. When the capacity of these entities is exceeded, point bars can form or these entities can become (*) braided. Sediment deposition caused by these entities can form alluvial fans. Landforms adjacent to these entities lie within their riparian zones. These entities can be cut off to form oxbow lakes, and they often have deltas at their mouths. For 10 points, tributaries are branches in what flowing bodies of water?

ANSWER: rivers [or streams]

<BB Other Science (Earth Science)>

14. A ruler of this region painted his shield with the face of a woman nicknamed “Dangerosa” whom he kept in a special tower in his castle. A ruler of this region gifted Abbot Berno one of his hunting lodges, where centuries later Peter the Venerable commissioned a translation of the Qur’an. Andreas Capellanus claimed that this region was home to a court where love disputes were settled. An appeal from (*) Odo the Great, a duke of Vasconia and this region, led Charles Martel to fight the Umayyads at the Battle of Tours (“toor”). Dukes of this region named William included the founder of Cluny Abbey and the earliest known troubadour. A woman from this duchy separated from her husband Louis VII after accompanying him on the Second Crusade. For 10 points, name this duchy in southwest France that was home to Henry II’s wife Eleanor.

ANSWER: Aquitaine [or Guylene; or Aquitaine-Limousin-Poitou-Charentes; or Poitou]

<JB European History>

15. A book from this country dubs life “a tedium that includes the expectation of nothing but more tedium” and contains four passages titled “The Art of Effective Dreaming.” In a novel from this country, a doctor impregnates the hotel maid Lydia after returning from Brazil on the *Highland Brigade*. A book from this country consists of 481 numbered fragments and is a “factless autobiography” attributed to a clerk, one of the author’s (*) many literary voices, or “heteronyms.” That author of *The Book of Disquiet* appears as a ghost in *The Year of the Death of Ricardo Reis*, a novel by another writer from this country. A novel by that writer from this country features unnamed characters such as the girl with dark glasses and the doctor’s wife. For 10 points, name this country home to Fernando Pessoa and the author of *Blindness*, José Saramago (“zhoo-ZEH sara-MAH-goo”).

ANSWER: Portugal

<JB European Literature>

16. A set of fifteen promises regarding this practice was supposedly given to Alanus de Rupe, an advocate of this practice. In *God Alone*, the collected writings of Louis de Montfort, five methods of performing this practice are listed; three more than in Montfort's book on the "secret" of this practice. While performing this practice, one contemplates events called the joyous, sorrowful, glorious, and luminous (*) mysteries. It is traditionally said that this practice was revealed to the founder of the Order of Preachers, Saint Dominic. The component prayers of this practice are organized into sets of ten called decades. For 10 points, numerous Hail Marys are said while performing what practice that uses a string of prayer beads?

ANSWER: Holy Rosary

<WC Religion>

17. Kelvin proved that this quantity is at a minimum along the boundary for irrotational flow in a simply connected domain with a prescribed normal flux at the surface. For a charged particle in a magnetic field, this quantity equals π times mass times the square of the Larmor radius times the square of the cyclotron frequency. For a collection of particles interacting via gravity, the average value of this quantity equals negative one-half times the average of V , according to the (*) virial theorem. The difference between this quantity and V gives the Lagrangian. In classical mechanics, p squared over $2m$ gives this quantity. Both momentum and this quantity remain unchanged after a perfectly elastic collision. One-half m times v squared gives this quantity. For 10 points, name this type of energy that moving objects have.

ANSWER: kinetic energy [accept T or K or KE; prompt on energy]

<SY Physics>

18. Margaret Leng Tan is best known for playing a type of this instrument. Each piece in a collection for this instrument uses a different unit size for its complex, nested, "square root form" proportions and illustrates a different emotion, like heroism or eroticism, from Indian aesthetics. A soprano vocalise is amplified by one of them in *Ancient Voices of Children* by George Crumb. Space constraints for a performance of Syvilla Fort's ballet *Bacchanale* inspired the (*) first true use of a type of this instrument. This instrument's extended techniques are used in *Aeolian Harp*, *The Banshee*, and *The Tides of Manaunaun* by Henry Cowell. *Sonatas and Interludes* was composed for a type of this instrument in which objects like screws, bolts, and rubber are placed on its strings, its "prepared" type. For 10 points, what instrument does the performer of John Cage's *4'33"* sit in front of silently?

ANSWER: piano [or prepared piano; or toy piano; or amplified piano]

<JB Music>

19. In 1999, the formation of a politically-heterogeneous Technical Group of Independents in this legislature led to a ruling against mixed groups. During an address by Pope John Paul II, a member of this legislature held up a poster reading "Pope John Paul II Antichrist" and yelled "I denounce you as the Antichrist," prompting an altercation with Otto von Habsburg. This legislature is not in the UK or Ireland, but (*) Ian Paisley served in it for 25 years. In this legislature, a short-lived far-right group called Identity, Sovereignty, Tradition was formed under the leadership of the National Front. Unlike two related legislative bodies called the Council and the Commission, this legislature has its seat in Strasbourg and not Brussels. For 10 points, name this directly-elected legislature of the European Union.

ANSWER: European Parliament [or the Parliament of the European Union; do not accept "Council of the European Union" or "European Commission"]

<WC European History>

20. This person negotiated with the Wild Boys of Dapecol, a group of inmates who took hostage 15 members of the Joyful Assemblies of God. That hostage crisis saw the gang-rape of Jacqueline Hamill, about which this leader dubiously joked, “the mayor should have been first.” He accused his critic Leila de Lima of involvement in illegal activities at the New Bilibid Prison by releasing a (*) “drug matrix.” Prior to an ASEAN summit, this leader called Barack Obama a “son of a bitch” and threatened to swear at him if he asked about extrajudicial killings. This leader noted that “Hitler massacred three million Jews” before stating that he would “be happy to slaughter” three million drug addicts. For 10 points, name this foul-mouthed current president of the Philippines.

ANSWER: Rodrigo Roa Duterte [accept Digong]

<WC Other (Current Events)>

Bonuses

1. A seamstress stitches a secret code into her dresses to aid one side in this conflict in Maria Dueñas's novel *The Time In Between*. For 10 points each:

[10] Name this war, the setting of a story that ends with the narrator laughing hysterically after he learns that a soldier whom he pretended to betray to escape execution was actually found hiding in a cemetery.

ANSWER: **Spanish Civil War** [or Guerra **Civil Española**] (The story is "The Wall" by Jean-Paul Sartre.)

[10] This author described his imprisonment during the war in his book *Spanish Testament*, and drew on his time in prison to chronicle Rubashov's confinement in his novel *Darkness at Noon*.

ANSWER: Arthur **Koestler** [or Artúr **Kösztlér**]

[10] In *Darkness at Noon*, Joseph Stalin is implicitly represented as this character. Hare-Lip is executed after he confesses that Rubashov attempted to poison this figure.

ANSWER: **Number 1** [or **No. 1**]

<AP European Literature>

2. In 1849, John Webster was convicted of murdering George Parkman, a member of this group, after the latter's body parts were found in his laboratory. For 10 points each:

[10] Name this group with a name coined by Oliver Wendell Holmes, Sr., which consists of families such as the Welds and Coolidges.

ANSWER: Boston **Brahmins** [prompt on equivalents of **Boston high society**]

[10] The same year George Parkman was killed, his relative Francis Parkman published an account of this wagon trail, which pioneers took from Missouri to a namesake Northwestern territory.

ANSWER: **Oregon Trail**

[10] In 1894, three Boston Brahmins founded a league for the restriction of this practice. The 1965 Hart–Celler Act overturned the use of a formula to restrict this practice that had been implemented by a 1921 act.

ANSWER: **immigration** [or equivalents of foreigners **coming** to the **United States**; accept more specific answers such as **Chinese immigration**]

<JB American History>

3. The method of multiple scales is a form of this technique that removes unwanted secular terms. For 10 points each:

[10] Name this technique that solves a complicated problem by decomposing the problem into a known problem plus a small disturbance, and expressing the solution to the complex problem using the solution to the known problem.

ANSWER: **perturbation theory**

[10] In quantum mechanical perturbation theory, the perturbation is added to this operator that represents the total energy of a system.

ANSWER: **Hamiltonian** [accept **H**]

[10] In time-dependent perturbation theory in the interaction picture of quantum mechanics, the time evolution operator can be approximated using this expansion, whose n th term contains the product of n minus 1 integrals of time-ordered potential operators.

ANSWER: **Dyson series**

<SR Physics>

4. This concept was partly inspired by its formulator's Experience Sampling Study, in which he had teens record their feelings whenever a pager beeped. For 10 points each:

[10] Name this state theorized by Mihaly Csikszentmihalyi ("mee-HYE CHEEK-sent-mee-HYE-ee") that appears in the upper right quadrant of the skill level versus challenge level graph. It is characterized by complete immersion in an activity.

ANSWER: **flow** [prompt on being in the zone; prompt on related words such as attention or focus]

[10] Research on flow is part of this movement in psychology. In contrast to his learned helplessness theory, much of Martin Seligman's work, such as a classification of 24 character strengths created with Christopher Peterson, is part of this movement.

ANSWER: **positive** psychology [prompt on humanistic psychology]

[10] Carol Dweck, another positive psychologist, claimed that people with a "growth mindset" believe in the mutability of this attribute. The average score for this attribute on a test of its "quotient" is 100.

ANSWER: **intelligence**

<JB Social Science>

5. The commentary of Rashi, a French rabbi from Troyes ("twah"), is often printed along with this work. For 10 points each:

[10] Name this work that consists of a collection of oral laws, the Mishnah, and a collection of commentaries on the Mishnah, the Gemara. Most Jews believe that this work contains the oral portion of the Torah.

ANSWER: **Talmud**

[10] Members of this Jewish sect hold that the Torah is the only repository of God's word, and reject the Talmud. During World War II, this sect avoided extermination by the Nazis by claiming descent from the Turkic Khazars.

ANSWER: **Karaites** [or **Qara'im**]

[10] One Jewish practice not observed by Karaites is the wearing of *tefillin*, also known as phylacteries, on one's forehead and left arm during prayer. *Tefillin* are black leather boxes that contain these items.

ANSWER: Torah **scrolls** [accept **parchment** or other types of **paper**; accept **verses** from the **Torah** or equivalents; prompt on **Torah**]

<WC Religion>

6. This composer's *Illuminations from the Beyond...* uses the modes of limited transposition that he developed in *The Technique of My Musical Language* almost 40 years earlier. For 10 points each:

[10] Name this Catholic French composer whose wife, Yvonne Loriod, played the ondes Martenot ("ond mart-NO") in his *Turangalila-Symphonie*. He wrote *Quartet for the End of Time* in a German POW camp.

ANSWER: Olivier **Messiaen** ("mess-YAWN")

[10] Messiaen's first piano prelude and the clarinet trills in the Quartet's first movement imitate the song of these animals. A solo violin depicts one of these animals in Ralph Vaughan Williams's *The Lark Ascending*.

ANSWER: **birds** [or **birdsong**; accept more specific answers like **doves** or **blackbirds**]

[10] Alexander with this surname composed ten Bagatelles and listed Georgian harmony and a namesake nine-note scale, equal to Messiaen's third mode, in *Basic Elements of My Musical Language*. His father Nikolai taught Haydn to Prokofiev, who "dreaded" his tough criticism.

ANSWER: **Tcherepnin** [accept Alexander **Tcherepnin** or Nikolai **Tcherepnin**]

<OL Music>

7. You are a citizen of ancient Rome. Name some things that you might have consumed, for 10 points each.

[10] In 1983, Jerome Nriagu claimed that a sweet syrup called *defrutum* or *sapa*, produced by boiling juice extracted from this fruit, contributed to lead poisoning among Romans. This fruit was also used to produce wine.

ANSWER: grapes [or uvae]

[10] This foodstuff was fermented to produce a sauce called *garum*. The *retiarius* was a lightly armored class of gladiator whose equipment was inspired by that of workers who collected this foodstuff.

ANSWER: fish [or piscēs; accept specific types of fish; prompt on meat]

[10] The city of Cyrene was known for exporting this herb, a type of fennel that was thought to have contraceptive properties. It is believed that the overharvesting of this herb may have led to its extinction.

ANSWER: silphium

<WC European History>

8. If this character saw a “straddle bug start to go anywheres, he would bet you how long it would take him to get to wherever he going to,” and follow it to Mexico to measure the time. For 10 points each:

[10] Name this character who loses a 40-dollar bet after a stranger pulls a trick involving quail shot. The story about this person is prompted by the narrator asking Simon Wheeler about Reverend Leonidas.

ANSWER: Jim Smiley [accept either underlined name]

[10] Dan'l Webster is the title “Celebrated Jumping Frog of Calaveras County” in a story by this author of a novel in which the slave Jim and Huck Finn raft down the Mississippi.

ANSWER: Mark Twain [or Samuel Langhorne Clemens]

[10] *The Celebrated Jumping Frog of Calaveras County and Other Sketches* was published the same year that Twain embarked for the Holy Land aboard the Quaker City, an experience he documented in this travel book.

ANSWER: *The Innocents Abroad, or The New Pilgrims' Progress*

<AP American Literature>

9. Edward Kmett created a Haskell library based on O'Connor's generalization of the van Laarhoven type of these constructs, which focus on one part of a compound data type. For 10 points each:

[10] Name these composable constructs with two functions: *get* extracts data from deep inside an immutable object's structure, and *set* takes a value and an object and returns a copy of the object with updated data.

ANSWER: lenses [prompt on functional references]

[10] Lenses, currying, and other techniques are often used in functional programming, which implements this formal system developed by mathematician Alonzo Church, named for the symbol used to denote anonymous functions.

ANSWER: lambda calculus

[10] According to the Curry–Howard correspondence, a lambda calculus formalism with these features relates directly to mathematical proofs. Boolean, string, and integer are common examples of these things.

ANSWER: data types

<JB Other Science (Computer Science)>

10. Answer some questions about philosophical discussions of *zoe* and *bios*, Greek words for natural and political life respectively, for 10 points each.

[10] In *Homo Sacer*, this philosopher expanded on the distinction to introduce his idea of “bare life.” This thinker examined the suspension of laws in times of crisis in his Carl Schmitt-inspired book *State of Exception*.

ANSWER: Giorgio Agamben

[10] John Hick stressed the value of developing from *bios* to *zoe* in his “soul-making” response to this problem. Theodicies are attempts to resolve this problem.

ANSWER: the problem of evil [accept anything like “Why does God allow evil to exist?”; prompt on related answers that do not mention evil]

[10] This French thinker wrote “modern man is an animal whose politics places his existence as a living being in question” in the first volume of his *The History of Sexuality*, which also introduces the concept of biopower.

ANSWER: Michel Foucault

<JB Philosophy>

11. An architect couple from this country was inspired by the Wankel engine in their design of the Mercedes-Benz museum in Stuttgart, Germany. For 10 points each:

[10] Name this home country of an architect who founded the Office of Metropolitan Architecture with Elia Zenghelis. That architect from this nation wrote an essay about the emergence of “Junkspace.”

ANSWER: The Netherlands [or Holland] (The designers of the Mercedes-Benz museum are UNStudio’s Ben van Berkel and Caroline Bos.)

[10] The author of “Junkspace” was this Harvard professor who designed the Seattle Central Library, the Casa de Música in Porto, and the largest building in the Netherlands, De Rotterdam.

ANSWER: Remmert Lucas “Rem” Koolhaas

[10] Koolhaas also helped designed the CCTV headquarters and the Shēnzhèn (“shun-jun”) Stock Exchange building in this nation, the birth nation of the designer of the Louvre Pyramid, I. M. Pei.

ANSWER: People’s Republic of China

<AP Other Arts (Architecture)>

12. During this period, shanty towns and horse-pulled cars were nicknamed Bennett boroughs and Bennett buggies. For 10 points each:

[10] Name this period of economic downturn during the 1930s that was worsened in Canada by the Hawley–Smoot tariff.

ANSWER: the Great Depression

[10] This Canadian movement, based on C. H. Douglas’s theory of the importance of purchasing power, grew due to the Great Depression. A party of this name governed Alberta for nearly 40 years and was founded by the radio evangelist Bill Aberhart.

ANSWER: Social Credit

[10] The Great Depression also led J. S. Woodsworth, a politician born in this province, to found the socialist Co-operative Commonwealth Federation. This province’s capital was the site of a 1919 general strike.

ANSWER: Manitoba

<JB European History>

13. In a short story, the Professor is attacked by a dog and gets his tongue cut out while visiting this country. For 10 points each:

[10] Name this country, the setting of “A Distant Episode.” In a novel by the same author, Port and Kit Moresby begin a disastrous trip into the desert in this country.

ANSWER: Morocco

[10] Morocco is the setting of both *The Sheltering Sky* by Paul Bowles and a travelogue by this other American author titled *In Morocco*. She wrote *The House of Mirth*, *The Age of Innocence*, and *Ethan Frome*.

ANSWER: Edith Wharton

[10] This semi-autobiographical novel is a collection of “routines” mainly about Bill Lee, who takes the drug *majoun* in a part of the Interzone that is loosely based on Tangier.

ANSWER: Naked Lunch (by William S. Burroughs)

<AP Other Literature>

14. Answer the following about the *Chiranjīvis* (“chih-run-JEE-veez”), figures in Hindu mythology who were immortal, for 10 points each.

[10] Since he is immortal, Parashurāma (“PUH-ruh-shoo-RAH-muh”), the sixth of these figures, confusingly outlived both the seventh and eighth of these figures, Rāma and Krishna. These figures were human manifestations of the Hindu preserver god.

ANSWER: avatārs of Vishnu [or Daśāvatāra]

[10] This younger brother of Rāvana was granted immortality only until the end of the first four yugas. After Rāvana’s death, Rāma appointed him Lankan king, since he had joined Rāma’s side before the war.

ANSWER: Vibhishana

[10] This god, who appears on Arjuna’s chariot flag, was a son of the wind god Vāyu, and aided Sugrīva while he was hiding from Vāli. After being struck in the chin by Indra’s thunderbolt, his name was changed from Māruti.

ANSWER: Hanumān [or Ānjaneva]

<AP Mythology>

15. The “isothermal” form of this quantity equals the negative heat capacity at constant pressure times the normal form of this quantity. For 10 points each:

[10] Name this quantity symbolized μ . It is zero at all points on an inversion curve.

ANSWER: Joule–Thomson coefficient

[10] The Joule–Thomson coefficient is defined as the derivative of temperature with respect to pressure, with this state function held constant. Its derivative with respect to temperature gives the heat capacity at constant pressure.

ANSWER: enthalpy [accept H]

[10] Because enthalpy is a state function, this law named for a Swiss chemist states that the enthalpy change for a process with multiple steps equals the sum of the enthalpy change for each individual step.

ANSWER: Hess’s law

<BB Chemistry>

16. American coins marked with the letter “D” are now made in Denver, but in the past they were made in this city. For 10 points each:

[10] Name this city that was home to a branch of the U.S. Mint during the 19th century because of its state’s gold rush.

ANSWER: **Dahlonega**

[10] Dahlonega is in this state, whose capital was moved during the Civil War from Milledgeville to Macon before moving to its current site in 1868.

ANSWER: **Georgia**

[10] The official Georgia quarter depicts one of these fruits. This fruit’s tree names 71 different streets in metropolitan Atlanta.

ANSWER: **peaches**

<NC Other (Geography)>

17. These peoples had a name originating from their role in the left wing of the Mongol army, and were led by the conqueror Galdan until he was defeated by the Kāngxī Emperor at Dzuunmod. For 10 points each:

[10] Name these peoples who were exterminated by the Qiánlóng Emperor’s forces in his Ten Great Campaigns. Mark Levene, a genocide scholar, described the atrocity as “the 18th-century genocide par excellence.”

ANSWER: **Dzungars** [or **Junggars**; or **Dzhungars**; or **Dsongars**; prompt on **Qirats** or Western **Mongols**]

[10] Before their extermination, the Dzungars ruled over this Muslim ethnic group, on which they imposed heavy taxes. This ethnic group now inhabits an “autonomous region” in northwestern China called Xīnjiāng.

ANSWER: **Uyghurs** [or **Wéiwúěr**]

[10] The Kāngxī and Qiánlóng Emperors were rulers from this Manchu imperial dynasty, the last to rule China.

ANSWER: **Qīng** dynasty [do not accept “Qín”]

<WC World History>

18. Answer the following about the involvement of poets in the English Civil War, for 10 points each.

[10] This cavalier poet of “To Lucasta, Going to the Wars” wrote “To Althea, from Prison” while imprisoned during the first phase of the war.

ANSWER: Robert **Lovelace**

[10] While tutoring the daughter of Parliamentary general Thomas Fairfax, Andrew Marvell described this home of his employer as a “Work of no foreign architect” in a country house poem titled for it.

ANSWER: **Appleton** House [or “Upon **Appleton** House”]

[10] A few years before being implicated in the First Army Plot, this poet compared a bride’s feet to “little mice” and referenced having sex “With Bridget, and with Nell” in the poem “A Ballad upon a Wedding.”

ANSWER: John **Suckling**

<JH British Literature>

19. Thousands of paintings by an expressionist painter of this nationality were found in a Bellport, New York garage in 2007. For 10 points each:

[10] Name this nationality shared by an artist who painted *The Liver is the Cock's Comb* and depicted his dead mother with mitt-like hands, Arshile Gorky.

ANSWER: **Armenian**-Americans

[10] Both Arthur Pinajian and Arshile Gorky painted in a style of expressionism denoted by this adjective. This adjective describes art which does not attempt to represent visual reality.

ANSWER: **abstract** [or word forms such as **abstraction**]

[10] Gorky's *Garden in Sochi* depicts two of these objects that his father gave him before leaving for America. Meyer Schapiro criticized Martin Heidegger's analysis of a van Gogh painting of these objects.

ANSWER: **shoes** [or **boots**; or **slippers**]

<JB Painting>

20. This genus's *amyloliquefaciens* species produces the enzyme barnase, which is known for its extremely tight binding with its inhibitor barstar. For 10 points each:

[10] Name this genus of bacteria, whose *subtilis* species is found in soil and whose *cereus* species causes food poisoning in fried rice that has been sitting out too long.

ANSWER: **Bacillus** [accept **Bacillus subtilis** or **Bacillus cereus**]

[10] Another species of *Bacillus* causes this disease, which is spread by contact with spores. In a 2001 incident, the spores that cause this disease were spread through the mail.

ANSWER: **anthrax** [accept *Bacillus anthracis*]

[10] Alan Fersht and Satoshi Sato used barnase to study this process using phi value analysis. The theory of "hydrophobic collapse" states that this process occurs via hydrophobic regions coming together to form a dense core.

ANSWER: **protein folding** [or polypeptide folding; prompt on **folding**]

<SR Biology>