

Regular Academic Fall Tournament III

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Packet 7

1T. **One of this composer’s symphonies opens with violins playing E-flat, D, D three times before jumping to B-flat; that symphony’s fourth movement begins with a Mannheim rocket. Robert Levin theorized that a work by this composer intended to include an “Amen fugue.” A five-theme fugato ends this composer’s final symphony, nicknamed after a (*) Roman god.** This composer’s 41 symphonies include a “Great” G minor symphony, one of only two in a minor key. This composer of the “Jupiter” Symphony had one of their works completed by Franz Sussmayr. For 10 points, name this Austrian child prodigy who left their *Requiem* in D Minor unfinished.

ANSWER: Wolfgang Amadeus Mozart <Chen — Auditory Fine Arts>

1B. These entities come in wagging, twisting, rocking and scissor types. For 10 points each:

[H] Name these vibrations measured in infrared spectroscopy that occur when there is a change in angle between two bonds. These vibrations are contrasted with stretching vibrations.

ANSWER: bending vibrations

[M] In infrared spectroscopy, compounds with this geometry have [read slowly] “three n minus five” vibrational modes. Compounds with this geometry are sp hybridized and include carbon dioxide.

ANSWER: linear geometry

[E] The x-axis of an infrared spectrum is the wavenumber, which measures the spatial form of this property. This property is commonly given as the number of events per unit time and has units of Hertz.

ANSWER: frequency

<Sivakumar — Chemistry>

2T. **This element is reacted with calcium carbide in the Frank-Caro process. Along with boron, this element forms an extremely hard compound with a lattice structure isoelectronic to diamond. A compound consisting of sodium and three atoms of this element is commonly used in airbags. An oxoacid of this element is generated using a platinum-rhodium catalyst in the (*) Ostwald process.** This element has an unusually low electron affinity due to its half-filled 2p subshell. This element reacts with hydrogen in the Haber process to produce ammonia. For 10 points, name this element that is the most common in Earth’s atmosphere.

ANSWER: nitrogen [or N]

<Tran — Chemistry>

2B. This politician’s campaign slogan for the 1972 presidential election was “unbought and unbossed,” which later became the title of her autobiography. For 10 points each:

[H] Identify this politician, the first Black congresswoman. This politician was also the first Black person to run for the presidential nomination of a major political party.

ANSWER: Shirley (Anita) Chisholm

[E] Chisholm hoped to defeat this incumbent president in 1972. This president resigned two years later in the wake of the Watergate scandal.

ANSWER: Richard (Milhous) Nixon

[M] After this politician was shot, Chisholm controversially visited him in the hospital, leading to an unlikely political alliance in which this politician helped Chisholm pass a minimum wage law for domestic workers. This violently racist governor of Alabama opposed the integration of the University of Alabama with his Stand in the Schoolhouse Door.

ANSWER: George (Corley) Wallace <Chakraborty — American History>

3T. *Note to players: two answers required. One of these two countries passed the Geary Act to extend an already existing policy against the other. At the 1954 Geneva Conference, a high-ranking government official from one of these countries refused to shake the hand of the other country's Foreign Minister. During the Cold War, relations between these two countries were thawed using (*) "ping-pong diplomacy," which paved the way for President Richard Nixon's visit to the other of these two countries. For 10 points, name these two countries whose capitals are Beijing and Washington, D.C.*

ANSWER: China and United States of America [accept answers in either order; accept obvious equivalents for "United States of America"; accept People's Republic of China; accept PRC; accept Zhongguo; do not accept or prompt on "Republic of China"]
<Rao — Other History>

3B. This state contains a building whose Great Workroom is filled with dendriform "lily pad" columns. For 10 points each:

[H] Name this state whose city of Racine is the site of the Johnson Wax Headquarters building. The original Taliesin studio was located in this state before it burned down.

ANSWER: Wisconsin

[E] This American pioneer of the Prairie School of architecture grew up in Wisconsin and built the studio Taliesin in the southwest of the state. This architect also designed the Robie House and Fallingwater.

ANSWER: Frank Lloyd Wright

[M] Frank Lloyd Wright possessed a large collection of prints from this country which he thought exemplified an "elimination of the insignificant." Wright designed an Imperial Hotel in this country's capital that survived a 1923 earthquake and subsequent fire.

ANSWER: Japan [or Nippon]

<Boonin — Other Fine Arts>

4T. **After being injured during a fight over a union meeting, the protagonist of this novel undergoes electroshock therapy. In this novel, Mr. Norton passes out during a bar fight at the Golden Day saloon, causing the protagonist to be expelled by Dr. Bledsoe. After the protagonist of this novel leaves his factory job at (*) Liberty Paints, he becomes a spokesperson for the Brotherhood. In this novel, a race riot is incited by Ras the Exhorter, after which the narrator decides to steal electricity and isolate himself in an underground cellar. For 10 points, name this novel narrated by an unnamed Black man who struggles to be seen, written by Ralph Ellison.**

ANSWER: Invisible Man [do not accept or prompt on "*The Invisible Man*"] <Wu — American Literature>

4B. The first leader of this religion stated "there is no Hindu, there is no Muslim." For 10 points each:

[M] Name this religion first led by Nanak. This religion features five specific clothing guidelines that its adherents should follow.

ANSWER: Sikhism

[E] Two of Sikhism's five k's concern this bodily feature. Those two are kanga and kesh, which consist of leaving this feature uncut and using a wooden comb to keep it orderly.

ANSWER: hair

[H] This one of the five k's is a bracelet meant to symbolize a Sikh's connection to the Guru. It also represents that God has no beginning or end.

ANSWER: kara

<Morales — Religion>

5T. **The Leontief and Cobb-Douglas functions are used to quantify this process. The effect of differences in two inputs for this process is represented in the 2 by 2 by 2 model. A curve named for this process may be concave if an industry experiences economies of scale. An economy is considered fully employed if its output lies on a curve named for this frontier, which can be expanded through (*) technological advancements or international trade. The total amount of this process for an economy is quantified by GDP. Land, labor, and capital are referred to as the "factors" of this process. For 10 points, name this economic process that creates goods and services.**

ANSWER: production [accept Leontief production function or Cobb-Douglas production function or factors of production or production possibilities curve or production possibilities frontier; prompt on GDP or gross domestic product before "GDP"]

<Ye — Social Science>

5B. This empire's founder, Ismail I, was descended from Uzun Hasan of the "White Sheep" tribal confederation. For 10 points each:
[H] Name this empire that originated from a Sufi order. Tahmasp, this empire's second ruler, fought with the Qizilbash militants over control of this empire.

ANSWER: **Safavid** Empire

[E] The Safavids ruled over what is now this country, which contains their capital of Isfahan. A 1979 revolution in this country led to Ayatollah Khomeini taking power from Mohammed Reza Shah Pahlavi.

ANSWER: Islamic Republic of **Iran**

[M] The Safavids were defeated at the Battle of Chaldiran by forces from this neighboring empire. The Safavid city of Tabriz was captured by this empire's ruler Selim the Grim.

ANSWER: **Ottoman** Empire <Ah Now — World History>

6T. **In a simple harmonic oscillator, the maximum value of this quantity is given by amplitude times angular frequency squared. This quantity is assumed to be constant in Torricelli's equation. The fragility of a material measures the maximum amount of this quantity it can undergo. A change in this quantity characterizes mechanical shock. This quantity is equal to velocity squared over (*) radius for an object in uniform circular motion, called its "centripetal" type. The time derivative of this quantity is jerk. On Earth, this quantity due to gravity is 9.8 meters per second squared. For 10 points, name this quantity that represents the rate of change of velocity over time.**

ANSWER: **acceleration** [accept gravitational **acceleration**]

<Chen / Ye — Physics>

6B. In this story, Joe gets defensive when Maria mentions his estranged brother Alphy. For 10 points each:

[H] Name this short story. In this story, Maria plays a Halloween game with the children at the Donnelly household where she chooses the title substance, which symbolizes death, then re-chooses a prayer book.

ANSWER: "**Clay**"

[M] "Clay" is a short story in this collection. In "The Dead," another story in this collection, the song "The Lass of Aughrim" reminds Greta of a boy she loved, upsetting her husband Gabriel.

ANSWER: **Dubliners**

[E] *Dubliners* is by this author who wrote about a day in the life of Leopold Bloom in the stream-of-consciousness novel *Ulysses*.

ANSWER: James **Joyce**

<Sarma — British Literature>

7T. **In the finale of this TV show's second season, one character accepts a marriage proposal and then goes to a prom, only for her new fiancé to die during the party. In another episode of this show, that character gets the nickname "model" after photos of her are posted around a building by a character nicknamed "Evil Spawn." In another episode of this show, Dr. George O'Malley confronts (*) Alex Karev over the "syphilis nurse." This TV show created by Shonda Rhimes features Katherine Heigl as Izzie Stevens and Patrick Dempsey as "McDreamy." Ellen Pompeo stars as Meredith on this show, which is set in Seattle Grace Hospital. For 10 points, name this long-running medical drama.**

ANSWER: **Grey's Anatomy**

<Morales — Pop Culture>

7B. The Langlois [lahng-lwah] Bridge in this city was the subject of four paintings, including an oil painting containing a woman painted in black holding an umbrella. For 10 points each:

[H] Name this city on the Rhône River. A painting of a bedroom that was contained in an artist's "Yellow House" in this city features a green window along with three paintings on the walls.

ANSWER: **Arles** [ARL] [accept *Langlois Bridge at Arles* or *Bedroom in Arles*]

[E] Arles served as a residence to this artist from February 1888 to May 1889. After admitting himself to the Saint-Paul Asylum, this artist later painted *Starry Night*.

ANSWER: Vincent (Willem) **van Gogh**

[M] During and after his stay in Arles, van Gogh made several paintings of fields of this crop, including one "*With Crows*" and several others "*With Cypressess*." van Gogh also painted a *Peasant Woman Against a Background of [this crop]* in the year of his death.

ANSWER: **wheat** [accept *Wheat Field with Crows* or *Wheat Field with Cypressess* or *Peasant Woman Against a Background of Wheat*]

<Rao — Visual Fine Arts>

8T. **A 1912 IWW strike in this state is alternately named for the socialist demand for “bread and roses.” In this state, Judith Payne and Eliza Hemingway testified during the first investigation of labor conditions in the United States. Many members of a group of “associates” that controlled much of this state’s industry during the 19th century were members of its capital’s elite class of (*) “Brahmins.”** Edwin Upton Curtis put down a police strike in this state, which led to governor Calvin Coolidge’s rise to national prominence. “Mill girls” worked in textile factories in this state’s city of Lowell. For 10 points, name this state governed from Boston.

ANSWER: Massachusetts

<Ah Now — American History>

8B. Cellular automata were popularized when John Conway developed this construct in 1970. For 10 points each:

[M] Name this two state, two dimensional cellular automaton that has four rules to determine whether cells survive or die with each successive turn. Gliders and spaceships are examples of moving objects that can be created in this construct.

ANSWER: (Conway’s) Game of Life

[H] This Hungarian mathematician pioneered the field of cellular automata while working on self-replicating systems and developed the universal constructor. This mathematician also developed a namesake computer architecture while working at Princeton.

ANSWER: John von Neumann [accept von Neumann universal constructor or von Neumann architecture]

[E] The Game of Life simulates this scientist’s namesake machine that mimics the structure of computers. This scientist’s work at Bletchley Park was instrumental in cracking the Enigma code during World War II.

ANSWER: Alan Turing

<Wang — Other Science>

9T. **In this location, the narrator of a 2011 novel by Madeline Miller heals Antilochus’s arrow wound. In one work set at this place, Polyxena is sacrificed at the tomb of a warrior. In another work set at this place, the maiden Chryseis is captured but eventually returned when Apollo sends a plague upon her captors. After returning to (*) Argos from this place, one character is stabbed in the bathtub by his wife Clytemnestra. In another work, Achilles avenges Patroclus’s death by dragging Hector’s body around this city for nine days on the back of his chariot. Odysseus fights for ten years in this city before sailing back to Ithaca.** For 10 points, name this setting of the *Iliad*, a city Greek soldiers entered by hiding inside a wooden horse.

ANSWER: Troy [or Ilium]

<Wu — World Literature>

9B. This politician was called “al Qaeda’s best friend in Congress” by Representative Devin Nunes. For 10 points each:

[H] Name this former representative who became the first Libertarian member of Congress in April 2020. This politician was the only non-Democrat in the House to vote to impeach Donald Trump in 2020, and he chose to not run for re-election in 2020.

ANSWER: Justin Amash

[M] Amash represented this state’s 3rd district from 2011 to 2021. This state’s governor Gretchen Whitmer was the subject of a kidnapping plot in October 2020.

ANSWER: Michigan

[E] In 2019, Amash co-sponsored H.R. 1588, which would end the federal prohibition of this substance. While only 18 states have legalized this drug for recreational use, 36 have legalized its medical use.

ANSWER: marijuana [accept equivalents such as cannabis or weed]

<Rao — Current Events>

10T. **Chapter 7 of this book describes a vision of four beasts coming out of the sea and “one like a son of man” receiving eternal kingship over the whole world. A king dreams of a beautiful, fruitful tree in this book with the description that “all flesh was fed from it.” One man in this book refuses to eat meat and wine rationed by the king, instead requesting (*) pulse and water.** A 60 cubit high, 6 cubit wide statue of gold was created by Nebuchadnezzar in this book. After refusing to bow to that statue, Shadrach, Meshach, and Abednego survived being thrown into a fiery furnace. For 10 points, name this biblical book named after a prophet who survives a full night in a lion’s den.

ANSWER: Book of Daniel

<Morales — Religion>

10B. This figure is Kunti's first son, whom she conceived with the sun god Surya before marrying Pandu and conceiving the Pandavas. For 10 points each:

[H] Name this *Mahabharata* character who is killed in a chariot duel when his wheel gets stuck in the ground. This man's death leads to the eventual dissolution of the Kaurava army.

ANSWER: **Karna**

[M] This third Pandava brother and central character of the *Mahabharata* kills Karna during their duel. Before the Kurukshetra War, this figure's charioteer Krishna convinces him to do his duty and fight.

ANSWER: **Arjuna** [or **Arjun**]

[E] Arjuna killed Karna with one of these weapons named Gandiva. Arjuna won the hand of Draupadi by shooting an arrow into the eye of a rotating target with one of these weapons.

ANSWER: **bow** and arrow

<Sarma — Other Literature>

11T. **Aurel Stein studied fresco paintings and religious manuscripts preserved inside this region's Mogao Caves complex. The Three-North Shelter Forest Program is a reforestation plan intended to contain rainwater in this region. The Dzungarian Basin in this desert is separated from the (*) Taklamakan Desert by the Tian Shan Mountains. This region's Flaming Cliffs were the site of Roy Chapman Andrews' discovery of fossilized dinosaur eggs. This desert is bounded by the Altai Mountains to the north and was formed by the rain shadow of the Himalayas. For 10 points, name this desert located in northern China and Southern Mongolia.**

ANSWER: **Gobi** Desert

<Wu — Geography>

11B. FASTA is a precursor to this algorithm. For 10 points each:

[H] Name this algorithm run by the National Center for Biotechnology Information that searches for DNA "hits" for a query sequence. The "x" version of this algorithm finds matching polypeptide sequences given a nucleotide input.

ANSWER: **BLAST** [or **Basic Local Alignment Search Tool**; accept variants such as **BLASTx**]

[M] BLAST is used in computational biology to analyze these sets of biological material in an organism. The shotgun method was historically used to sequence these sets of material.

ANSWER: **genomes** [or human **genomes**; prompt on **DNA**]

[E] A common application of BLAST is to compare the genomes of humans and these model organisms. In other applications, these rodents are trained to traverse mazes and other puzzles.

ANSWER: lab **mice** [or lab **mouse**; accept *Mus musculus*]

<Wang — Biology>

12T. **Paradoxically, the genus *Monocercomonoides* [MON-oh-sir-koh-MON-oi-DEES] completely lacks this organelle. TFAM is a protein found in this organelle's "matrix." This organelle contains inner and outer transport mechanisms called TIM and TOM complexes. A process in this organelle begins with the addition of acetyl to oxaloacetate [ox-ah-LOW-as-sit-ATE]. This organelle releases cytochrome c into the cytoplasm during (*) apoptosis. Inner folds called cristae in this organelle maximize its surface area. The fact that this organelle contains maternally-inherited DNA provides the basis for its namesake "Eve." For the point, name this organelle that is often known as the "powerhouse" of the cell.**

ANSWER: **mitochondria** [or **mitochondrion**]

<Kaung—Biology>

12B. This poem's title character is reminded of his dead wife when he hears his daughter singing in a choir. For 10 points each:

[H] Name this poem whose title "mighty man with sinewy hands" works "under the spreading chestnut tree."

ANSWER: "The **Village Blacksmith**"

[E] "The Village Blacksmith" is by this American poet. He also wrote "The Song of Hiawatha" and "Paul Revere's Ride."

ANSWER: Henry Wadsworth **Longfellow**

[M] Longfellow's poem "The Cross of Snow" recalls his wife's death in an accident involving one of these things. A group of poets including Longfellow is named for their work being read around these places inside homes.

ANSWER: a **fireplace** [or **Fireside** poets; prompt on **hearth** or other equivalents]

<Carvell — American Literature>

13T. In this country, an organization founded by Michael Davitt advocated the “three F’s” of land reform during this country’s namesake “Land War.” The forged Pigott letters falsely accused one politician from this country of condoning the stabbing of two officials in Phoenix Park. A civil war erupted in this country between pro and anti-treaty forces led by Michael (*) Collins and Eamon [AY-min] de Valera, respectively. Charles Parnell was a leader of this country’s home rule movement, which advocated for greater independence from Britain and ended with the 1916 Easter Rising. For 10 points, name this nation with capital Dublin.

ANSWER: Republic of Ireland [or Poblacht na hÉireann]

<Boonin — European History>

13B. A series of twelve points articulated by Lajos Kossuth in this year led to the resignation of Klemens von Metternich. For 10 points each:

[M] Name this 19th century year in which a series of revolutions occurred across Europe. Historian Eric Hobsbawm called this year the “Year of Failure” due to most of those revolutions not achieving lasting success.

ANSWER: 1848

[E] One of the most prominent revolutions in 1848 resulted in the abdication of this country’s “Citizen King” Louis-Philippe. Louis-Napoleon became the first president of this country’s Second Republic.

ANSWER: France [or French Second Republic or Deuxième République Française]

[H] Denmark’s March Revolution resulted in the establishment of a constitutional monarchy, though a peaceful settlement with this region’s duchy was never reached. Along with a southern neighbor, this region was the subject of two wars fought against Prussia.

ANSWER: Schleswig [or Slesvig or Sleswick; accept Duchy of Schleswig]

<Rao — European History>

14T. In one novel by this author, the skeleton of Dunstan Cass is found in a quarry clutching the title character’s gold. In that novel, a man banished from his hometown of Lantern Yard adopts the daughter of the deceased opium addict Molly Farren. John Raffles blackmails Nicholas Bulstrode with dark details of his past in one of this author’s novels. In one novel by this author, a man who strove to write (*) *The Key to All Mythologies* dies, leading the protagonist to marry Will Ladislaw. Dorothea Brooke appears in that novel by this author, which is subtitled “A Study in Provincial Life.” For 10 points, name this author of *Silas Marner* and *Middlemarch*.

ANSWER: George Eliot [accept Mary Ann Evans]

<Kala — British Literature>

14B. This composer’s inspiration in visual arts often led to them being considered the first impressionist composer. For 10 points each: [H] Hokusai’s *Great Wave off Kanagawa* inspired one of this composer’s works subtitled “three symphonic sketches.” The “Dialogue Between the Wind and the Sea” in that work is marked to be played “animated and tumultuously.”

ANSWER: (Achille) Claude Debussy

[E] Debussy’s aforementioned *La mer* inspired a composer from this country to write their *Sinfonia*. That composer, Luciano Berio also wrote the ending for *Turandot*, an opera in this country’s language by Giacomo Puccini.

ANSWER: Italy [or Italian Republic or Repubblica Italiana]

[M] *Festivals*, *Sirens*, and *Clouds* are three works of this type written by Debussy and named after James Whistler paintings including one in “Black and Gold.” Frederic Chopin also composed a set of three of these works, the second of which is in E-flat major.

ANSWER: nocturnes

<Morales — Auditory Fine Arts>

15T. A little girl can be seen placing her hand on a globe in a work titled for this person’s family by Edward Savage. A boat carrying two brown horses and a white horse appears in the background of a painting centering on this person standing with a sword at their side. *Parson Weems’ Fable* depicts this person behind a red curtain being scolded by their (*) father while holding an axe. The unfinished *Athenaeum Portrait* is of this person, which like the *Lansdowne Portrait* is by Gilbert Stuart. Emmanuel Leutze depicted this person *Crossing the Delaware*. For 10 points, name this first president of the United States.

ANSWER: George Washington [accept *The Washington Family* or *Washington Crossing the Delaware*]

<Morales — Visual Fine Arts>

15B. For 10 points each, answer the following about applications of special relativity in electromagnetism:

[M] Along with charge conservation, special relativity is used to derive this quantity from the principles of electrostatics. More commonly, the value of this quantity from a current is calculated with the Biot-Savart law.

ANSWER: **magnetic field** [or **B-field**]

[E] Special relativity is often used to study these phenomena emitted from charge carriers. These phenomena are oscillations of electric and magnetic fields in space and include radio and infrared.

ANSWER: electromagnetic **waves** [or EM **waves**; accept electromagnetic **radiation** or EM **radiation** or **EMR**; accept **light**; do not accept or prompt on “photons”]

[H] One of these objects named for Faraday is used to generalize Maxwell’s equations to curved spacetime. These objects generalize multilinear maps between vector spaces and include one named for Ricci curvature.

ANSWER: **tensor** [accept Faraday **tensor** or Ricci curvature **tensor**; prompt on **matrix**]

<Ye — Physics>

16T. **A god of this culture wore a flayed human skin around his waist. In the mythology of this culture, the second god to jump into a fire became the moon after the gods threw a rabbit at him, while their sun god was born from a ball of feathers. One god of these people self-immolated and became the morning star after sleeping with his sister. That god created the current (*) human race by mixing his blood with the bones of the dead. A black god of these people had his foot replaced with an obsidian mirror, and was the arch-enemy of a white god often depicted as a feathered serpent. For 10 points, name this culture whose gods included Tezcatlipoca and Quetzalcoatl.**

ANSWER: **Aztecs** [or **Nahua**]

<An — Mythology>

16B. For 10 points each, name the following about works set in times of epidemics:

[H] In this novel, Raymond Rambert struggles to escape the city of Oran with the aid of a smuggler named Cottard while Dr. Bernard Rieux attempts to rid the city of the title disease.

ANSWER: *The **Plague*** [or *La **Peste***]

[M] While fleeing Florence to escape the Black Death, a group of nobles including Pampinea, Dioneo, and Fiammetta tell stories to pass time in this collection by Giovanni Boccaccio.

ANSWER: *The **Decameron**: Prince Galehaut* [or ***Decameron**: Principe Galeotto*]

[E] An author from this country, José Saramago, wrote about a plague of blindness breaking out in an unnamed town with unnamed characters. He also wrote about this country’s capital in *The History of the Siege of Lisbon*.

ANSWER: **Portugal** [or the **Portuguese Republic**]

<Chen — European Literature>

17T. **After the Civil War, thousands of pro-slavery southerners founded the city of Americana in this country, where they became known as *confederados*. With a southern neighbor, this country resolved disputes over rubber extraction in the Treaty of Petropolis, thereby acquiring forests in Acre. This country’s politics was controlled by its centers of coffee and dairy production during its “coffee with (*) milk” period. In the New World, more slaves were transported *to* this country than any other. This country, which was supposedly discovered by Pedro Cabral, was given to Portugal in the Treaty of Tordesillas. For 10 points, name this country formerly ruled by two emperors named Pedro from its city of Rio de Janeiro.**

ANSWER: **Brazil** [or Federative Republic of **Brazil** or República Federativa do **Brasil**]

<Riley — World History>

17B. The mathematicians Theodorus and Theaetetus participate in a dialogue that attempts to differentiate these people from statesmen and philosophers. For 10 points each:

[H] Name these ancient Greek teachers who often specialized in rhetoric and debate. Plato claimed that these people were deceitful and contrasted them with philosophers, or true “lovers of wisdom.”

ANSWER: **sophists** [accept *The **Sophist***]

[M] The dialogue *Protagoras* deals with the question of whether this concept can be taught. Xenophon recorded a speech by a Sophist named Prodicus in which Heracles must choose between a life of this concept and one of vice.

ANSWER: **virtue** [or **arete**]

[E] Gorgias, a renowned Sophist, wrote an *Encomium* defending this mythological figure’s actions. This figure’s nickname of “the face that launched a thousand ships” is derived from the fact that her elopement with Paris sparked the Trojan War.

ANSWER: **Helen** of Troy <Ah Now — Philosophy>

18T. **This ion's concentration curve reaches its maximum value on the right side of a Bjerrum plot for seawater, which visualizes total DIC [D-I-C]. Above the compensation depth, oozes containing this anion can form from sedimentation of dead coccolithophores [CAW-co-LITH-oh-fors]. A class of minerals characterized by containing this anion include aragonite and dolomite. (*)** Karst topography primarily forms when minerals containing this anion dissolve. A compound containing this anion is present in skeletons that form coral reefs. Calcium and magnesium are found with this ion in limestone. For 10 points -- name this ion with chemical formula CO_3^{2-} [C-O-3-2-minus].

ANSWER: **carbonate** [accept calcium **carbonate** or magnesium **carbonate**; do not accept or prompt on "bicarbonate"]
<Tegulla — Other Science>

18B. Revolutionary trans musician Sophie Xeon died on January 30th, 2021. For 10 points each, answer the following about her work:
[M] Sophie was renowned for pioneering the "hyper" form of this genre of music alongside artists like A.G. Cook, 100 geecs, and Charli XCX.

ANSWER: **pop** [accept hyper**pop**]

[E] Sophie helped produce this singer's 2020 album *Chromatica*. This artist's earlier hits include "Bad Romance" and "Shallow," the latter of which was written for the film *A Star is Born*, which this artist starred in.

ANSWER: Lady **Gaga** [or Stefani (Joanne Angelina) **Germanotta**]

[H] This other producer described Sophie as "immortal through art" on an Instagram tribute. This artist's self-produced albums include 2020's *Miss Anthropocene* and 2015's *Art Angels*, as well as a 2012 record containing the song "Oblivion."

ANSWER: **Grimes** [or Claire Elise **Boucher**]

<Rynearson — Pop Culture>

19T. **Geoffrey Braithwaite tries to determine which of two stuffed birds inspired this author in Julian Barnes's novel titled for [this author]'s Parrot. This author frequently labored over finding "le mot juste," or the exact right word to convey his meaning. In a novel by this author of Salamambo, one character botches an operation on a clubfoot and causes his patient to develop gangrene. The protagonist of a novel by this author lies to (*) her husband about taking piano lessons while carrying on an affair with Leon Dupuis. That character created by this author incurs a debt to the merchant Lheureux she can not pay off, prompting her to commit suicide by ingesting arsenic. For 10 points, name this French author of Madame Bovary.**

ANSWER: Gustave **Flaubert**

<Gedajlovic — European Literature>

19B. Inscriptions called the Bulletin and the Poem provide written documentation for the events of one battle involving this empire. For 10 points each:

[M] Identify this ancient Anatolian empire that fought the forces of Ramesses II at the battle of Kadesh. The first recorded peace treaty was subsequently signed by this empire and Egypt.

ANSWER: **Hittite** empire [or the **Hittites**]

[H] Several copies of the Bulletin and the Poem have been found throughout Egypt, including at this temple complex commissioned by Ramesses II after Kadesh. This temple complex was moved to higher ground during the creation of the Aswan High Dam.

ANSWER: **Abu Simbel** temples

[E] The battle of Kadesh is also known for the heavy use of these weapons by both sides. These lightweight wheeled conveyances were often drawn by horses.

ANSWER: war **chariots**

<Chakraborty — World History>

20T. **This composer wrote an opera whose title character sings arias with text from John Donne's sonnet "Batter my heart, three person'd God" and the Bhagavad Gita. This composer collaborated with librettist Alice Goodman on an opera that dramatizes the PLO hijacking of the passenger liner Achille Lauro. This composer of The Death of Klinghoffer and (*) Doctor Atomic wrote an opera that opens with the arrival of the airplane "Spirit of '76" and includes the aria "This is prophetic" before a performance of The Red Detachment of Women. For 10 points, name this minimalist American composer of Nixon in China.**

ANSWER: John Coolidge **Adams**

<Carvell — Other Fine Arts>

20B. This creature's lair in Argonid was often believed to be an entrance to the Underworld. For 10 points each:

[M] Name this creature that was raised by Hera specifically to kill a certain hero. This creature that lived near Lake Lerna had poisonous breath and blood.

ANSWER: Lernaean **Hydra**

[E] This hero was sent to kill the Lernaean Hydra as the second of his twelve labors ordered by King Eurystheus. This man was also famous for another of those labors which led to him earning an invincible lion's pelt.

ANSWER: **Heracles** [accept **Hercules**]

[H] This nephew and charioteer of Heracles aided in the two-man job of cutting off the Hydra's heads and burning the stumps so no more could grow.

ANSWER: **Iolaus**

<Morales — Mythology>