Packet 13

Spartan Housewrite  
  
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Tossups:

1. **The activity of one part of this naturally-occurring structure is quantified using absorbance at 420 and 550 nanometers in the Miller assay. One component of this structure has an overactive "superscript Q" mutant. One component of this structure is commonly fused to a UAS sequence in yeast two-hybrid screening. The non-hydrolyzable IPTG is used as an inducer of this structure. It requires cAMP binding to (\*)** CAP for positive regulation. One part of this structure has O1, O2, and O3 sites, which bind to a repressor. This structure encodes a polycistronic RNA that encodes a permease, transacetylase, and beta-galactosidase via its A, Y and Z genes, all under one promoter. For 10 points, name this set of genes that allow *E. coli* to digest lactose.

ANSWER: **lac** operon

2. **The first governor of Maine who ardently advocated for its statehood before resigning to handle treaty negotiations with Spain held this surname. A drafter of the Compromise of 1850 and Minister to France with this surname was reported to have been sexually intimate with James Buchanan. That man with this surname eventually became the shortest serving Vice President in US history during the Pierce administration. A senator from (\*)** New York with this surname was largely responsible for the Northwest territories outlawing slavery before twice running as the vice presidential candidate with Charles Pinckney, and running for president in 1816. Including two politicians named William and one Rufus, for 10 points, identify this surname of a current independent senator from Maine named Angus.

ANSWER: **King**

3. **One of this author's characters imagines the title substance being pumped from her stomach, and relates it to her college suitemate's suicide attempt. The plot of that novel mirrors the Chappaquiddick Incident, as The Senator kills Kelly Kelleher in a car accident. Another novel by this author replaces the names of real-life people with names such as "The Athlete" and "The Playwright" in *Blonde*, which fictionalizes the life of Marilyn Monroe. A golden car painted with phrases such as "DONE BY CRAZY WOMAN DRIVER" and "Man the flying (\*)** saucers" is featured in a story by this author. In this author's most anthologized story, Connie reluctantly gets in a car with the devilish and supernatural Arnold Friend. For 10 points, name this prolific author of the novella *Black Water*, who also wrote the short story "Where Are You Going, Where Have You Been?"

ANSWER: Joyce Carol **Oates**

4. **One student of this thinker collaborated with the composer Fred Lerdahl on a theory of musical cognition; that Tufts University scholar is Ray Jackendoff. This thinker proposed a figure named "Prometheus" who brought the ability of "merge" to humanity in his 2015 book, *Why Only Us*. This thinker published a series of *Lectures on Government and Binding*, which expanded on the ideas in his most famous work. This thinker's ideas were challenged by Daniel (\*)** Everett, who studied the Piraha language. This author created the nonsensical example sentence "Colorless green ideas sleep furiously" to support his theory of generative syntax. This author of *Syntactic Structures* is most famous for proposing the existence of a Universal Grammar. For 10 points, name this MIT linguist.

ANSWER: Noam **Chomsky**

5. **The "Bloody Letter" was written by a revolutionary from this country declaring its independence. One prime minister of this country was assassinated by the rebel group IMRO. Civilians in this country were targeted by irregular troops called Bashi-Bazouks during an 1878 campaign. At the end of World War I, this country signed the treaty of Neuilly (\*)** -sur-Seine. During that war, this country was led by its Tsar Ferdinand I and lost the region of Dobruja to its Northern neighbor and Western Thrace to its Southern neighbor. This country was the target of a coalition of its neighbors in the Second Balkan War. For 10 points, name this country that lost land after siding with the Central Powers and attacking its neighbors, Serbia, Greece, and Romania, during World War I.

ANSWER: **Bulgaria**

6. **It’s not clustering, but an adaptive, statistical method for doing this process that estimates the probability of so-called "escapes" is called PPM. The Blahut-Arimoto algorithm is used to calculate rate-distortion functions, which give the theoretical bound of one type of these algorithms. A "dictionary-based" algorithm to perform this process works best on objects with many substrings, and has an encoded output of the index in its typically 256 character dictionary. That algorithm is (\*)** LZW and is commonly contrasted with the tree-building Huffman encoding to accomplish this process. One form of this process can remove redundant information and is seen in the JPEG file format. This process can come in lossy or lossless forms. For 10 points, name this computer process that can create rar or zip files which shrinks the size of a file.

ANSWER: **compression** [accept **lossy** or **lossless** **compression**]

7. **In one delightfully savage poem, this man wrote "The indigested vomit of the sea/ fell to the Dutch by just propriety." Another of his poems contains a refrain referencing a woman named Juliana who destroys him and his thoughts when she comes. This poet wrote that "These holy mathematics can/ in ev'ry figure equal man" in a stanza referencing the "quadrature" of a (\*)** house in which he was working as a tutor. The image of "a green thought in a green shade" is drawn from this poet's "The Garden." This poet of "An Horatian Ode upon Cromwell's Return from Ireland" spoke of his "vegetable love" in his most famous poem. For 10 points, what poet of "Upon Appleton House" and "The Mower" declared "Had we but world enough and time/This coyness, lady, were no crime" in "To his Coy Mistress?"

ANSWER: Andrew **Marvell**

8. **Reinier Nooms' signature alludes to his experiences with these objects, which he painted almost exclusively. A painting depicting one of these objects was displayed next to a poem written by the artist that asks "Where is thy market now?" These objects were a frequent subject of paintings by Raoul Dufy (Row-ool Du-FAY), including a work that depicts some at Cowes. A man sits next to his wife and a canvas on one of these objects depicted by (\*)** Edouard Manet. That painting is a portrait of an artist who purchased one of these objects to complete paintings en-plein-air at the insistence of Charles-François Daubigny. The *Zong* was one of these objects, as well as another that is being "tugged to her last Berth to be broken up". For 10 points, identify this vehicle depicted in *The Fighting Temeraire* and other seascapes by J.M.W. Turner.

ANSWER: **Boats** [accept equivalents such as **ships**, **yachts**, etc; accept *The* ***Slave Ship***]

9. **One philosopher argued that this branch of philosophy causes its subjects to become an object of lived experience or "Gegenstand des Erlebens" ("gay-gun des er-layb-ens"). A book in this field suggests a situation where cognition and imagination interact to argue that "free play" allows one to make statements in this field. In another work in this field of philosophy, (\*)** Schopenhauer said because food like "oysters, herring, lobster, etc." does not necessarily stir the senses, they can not be contemplated in this field that was also discussed by Kant in his *Critique of Judgment*. For 10 points, name this philosophical subject of Burke's book about the "Sublime and Beautiful" that concerns itself with art.

ANSWER: **Aesthetics** [prompt on appreciation of art, judgment of beauty] (The unnamed essays were Heidegger's "The Origin of the Work of Art" and "The Age of the World Picture")

10. **This country's military fought a guerrilla group led by Herman Toivo ja Toivo until his imprisonment in this country. One imprisoned former secret policeman from this country who led a unit called C10 is nicknamed "Prime Evil." The "Muldergate" scandal occurred in this country when information minister Connie Mulder used government funds to set up a newspaper supporting his party. This country intervened in a neighboring country's civil war in Operation Savannah. The (\*)** BOSS secret police service operated in this country. It's not Israel, but this country likely detonated a nuclear weapon in the Velas Incident. This country's military fought insurgent groups such as SWAPO and Umkhonto we Sizwe. It's not Germany, but this country's military often trained in its former territory of Namibia. For 10 points, name this country where the secret police frequently retaliated against anti-apartheid groups.

ANSWER: Union of **South Africa** [Accept **SA**]

11. **A statue in this city depicts a man in a suit whose upper torso and head have been replaced by a chunk of rock. That statue, the "Monument to the Unknown Bureaucrat", stands next to this city's municipal government building. A hydroelectric plant in this city's suburb of Kópavogur dams the Elliðaár (ell-ee-thuh-our) river. This city's Lækjartorg (lye-kyar-torg) square lies at the western end of Laugavegur (loog-uh-vay-gurr), a major shopping street. Many parks, sporting venues, and swimming pools can be found in this city's Laugardalur, or (\*)** Hot Spring Valley. This city's harbor is home to the Harpa concert hall, which was at one point the only active construction project in its country. This city's Ingólfur Square is named for the historical figure said to have been its country's first inhabitant. This city is home to the world's oldest parliament, the Alþing **(all-thing)**, as well as a museum detailing its settlement by the Norse. For 10 points, name this northernmost national capital, the most populous city in Iceland.

ANSWER: **Reykjavík**

12. **In a story set during this war, a watchmaker and a draper are killed for refusing to give up the password to get through one army's defense lines. Groups such as the "Avengers of the Defeat" and "Partakers of Death" are ill-equipped militias who fight alongside soldiers in one story set during this conflict. Besides "Two Friends," another story set during this war sees a mother house soldiers fighting in it before killing them by lighting (\*)** her house on fire after learning that her son has been killed in it. In addition to "Mother Savage", a story set during this war involves a group of travelers persuading Elizabeth Rousset to sleep with an officer to allow them to continue to Le Havre. Guy **(“gee”)** de Maupassant set his story "Boule de Suif" during, for 10 points, what 1870's war?

ANSWER: **Franco-Prussian** war [accept **Franco-German** war or **Guerre-franco allemande**]

13. **A slow "re-connection" associated with these systems occurs due to a localized diffusion region in the Sweet Parker mechanism. One equation that describes these systems sets two divided by the third power of the thermal de Broglie (de "Braw") wavelength times a ratio of degeneracy coefficients times an exponential term. These substances, described by the (\*)** Saha-Langmuir equation, exhibit low frequency waves caused by effective tension in the magnetic field named after Alfven. Toroidal tokamaks produce fusion reactions using these substances whose scale over which mobile charge carriers screen out electric fields is determined by the Debye Length. Ionized gas is another name for, for 10 points, what fourth state of matter?

ANSWER: **Plasma**

14. **Songs by a composer from this country are collected in the volume *A Pilgrim's Solace*. That composer from this country also wrote a set of 21 pieces scored for five viols and a lute, his *Lachrimae*. Another composer from this country wrote a piece for Catholic masses, *Gradualia*, and collaborated with his teacher on *Cantiones Sacrae*. That teacher from this country may have composed one piece in order to one-up Alessandro Striggio's *Ecce Beatam Lucem*, or to celebrate the birthday of a (\*)** queen of this country. That piece, a motet whose 40 voices are divided into eight choirs of five, has a title meaning "Hope in any other," *Spem in alium*. For 10 points, name this home country of Thomas Tallis, the subject of variations by a later composer from here, Ralph **(“RAFE”)** Vaughan Williams.

ANSWER: **England** [accept Great **Britain** or **U**nited **K**ingdom of Great Britain and (Northern) Ireland]

15. **The Kasubi Tombs were built to house the monarchs of one precolonial kingdom in this country. One ruler of that kingdom was nicknamed "King Freddy". It's not Rhodesia, but supporters of that kingdom in the Luwero Triangle were targeted by one leader of this country during a "Bush War" fought against the NRA. That kingdom was led by a series of rulers named Mutesa. This country was home to the precolonial kingdom of Bunyoro, which controlled trade in the Lake (\*)** Albert Basin. This country was led on two separate occasions by Apollo Milton Obote. Archbishop Janani Luwum was assassinated by the State Research Bureau in this country. For 10 points, name this country where the Buganda Kingdom was centered on Kampala.

ANSWER: **Uganda**

16. **One song by this artist portrays him "Lookin' for quarters/Maybe afford a falafel for dinner" before he calls himself "only black kid at a Sufjan concert." This singer will appear in movie with Rihanna directed by Hiro Murai in 2019 entitled *Guava Island*. One song by this singer repeats "Rich kid, asshole: paint me as a villain" while in the music video, he sits in a (\*)** diner where others slowly turn into him. This singer repeats "I wanted you to know/That I am ready to go, heartbeat" in one song off of his first album, *Camp*. Children perform the South African Gwara Gwara dance in one of this rapper's music videos in which he shoots at a church choir with an AK-47. "Sweatpants" and "3005" are featured on the album *Because the Internet* produced by, for 10 points, what singer, who alluded to police brutality in his song "This is America"?

ANSWER: Donald **Glover** [accept Childish **Gambino**]

17. **In a book named for this person, he commands "endure the persecution within the Brokendown House!" after giving a description of a man "clad in shining light" who orders people not to have sex while that man is gone. That book, which holds that this person is said to have been taught by Enosh-Uthram, was written in Syriac and belongs to a religion which holds Abraham and Moses as false prophets and whose history was recorded in the *Haran Gawaita*. In a letter to Pope Pius X, Bahá'u'lláh wrote that through the Báb "we have once again sent [this figure] unto you". Muhammad meets this figure with (\*)** Jesus in the second heaven. The Quran called this figure the first person to have been given his name, which in Arabic is Yahya. Mandaeans believe that Jesus was a "false messiah" who corrupted the teachings he received from this figure. For 10 points, name this cousin of Jesus and son of Zechariah, who immersed Jesus in the Jordan River.

ANSWER: **John the Baptist** [accept **Yahya** ibn Zakariya before mentioned; prompt on John by itself]

18. **With a design incorporating AR and VR, an artist from this country became the youngest person to design a BMW Art Car. In 2017, works by artists from this country depicting animal cruelty, including pit bulls running on a treadmill, were removed from a Guggenheim exhibition. This country was home to an exhibition called Fuck Off, which included a photo of a man giving the middle finger to the White House. In 2010, that artist filled Turbine Hall with (\*)** sunflower seeds. Performance artists from this country jumped on Tracey Emin's *My Bed* in the Tate Modern. A three-part photo series depicts an man from this country dropping an ancient urn; that artist also created a vase emblazoned with a Coca-Cola logo. For 10 points, name this country home to Ai **(“eye”)** Weiwei.  
ANSWER: People's Republic of **China**

19. **The mass transport of this material is proportional to the third power of the excess wind speed according to Bagnold's formula. Non-wasp organisms of genus *Ammophila* have been introduced to features composed of this material in order to preserve them. This material makes up seifs, which are formed when the prevailing winds come from multiple directions. Under one predominant wind direction, this material can form crescent-shaped structures pointing in the wind direction known as (\*)** barchans. A large expanse of this material made of gypsum covers an area in southern New Mexico named for its "white" kind. An area of land mostly covered by this material is referred to as an erg. This material is defined by being finer than gravel but coarser than silt. For 10 points, identify this particulate material which makes up dunes.

ANSWER: **sand** [prompt on “sediment” by asking “of what?”]

20. **An author from this country framed a novel as a letter to an unknown recipient from a painter who states "I shout of diabolic joy. Because no one can hold me back now." In another book from this country, Diadorim is learned to be a woman after he dies in a knife fight. *Agua Viva* was written by an author from this country, as well as a novel in which a woman sees black carbon outlines on the wall of her maid's room and later eats a cockroach. The (\*)** Devil to Pay in the Backlands is set in this country. Another author from this country wrote about the "Humanitist" Quincas Borba in both *Philosopher or Dog?* and a novel dedicated by its narrator "To the worm who first gnawed on the cold flesh of my corpse." The author of *The Posthumous Memoirs of Bras Cubas*, Machado de Assis, and Clarice Lispector are from, for 10 points, what country?

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

Bonuses:

1. For 10 points each, answer some questions about American towns and cities named after Sparta and its surroundings

[10] This state's city of Laconia, which hosts a yearly motorcycle rally, includes the tourist village of Weirs Beach on its largest lake, Winnipesaukee. This state is probably better-known for its White Mountains, which include the Presidential Range.

ANSWER: **New Hampshire**

[10] The city of Sparta, Wisconsin is located on a river named for this other Wisconsin city on the Mississippi River. This city was named by Zebulon Pike for a ball-and-stick sport popular among the local Native Americans.

ANSWER: **La Crosse**

[10] New Jersey's Sparta Township lies next to a lake named for this tribe of Native Americans. Many members of this tribe worked as iron-workers in New York City, and a tributary of the Hudson River that makes up the eastern part of the Erie Canal is also named for them.

ANSWER: **Mohawk** [prompt on any of Iroquois, Hotinnoshonni, Haudenosaunee]

2. Along with *Madame Bovary* and *Anna Karenina*, JPM Stern proposed this novel as the third volume in a trilogy criticizing late 19th century marriage norms. For 10 points each:

[10] Name this Theodor Fontane novel in which the title character kills herself after having an affair with Major Crampas.

ANSWER: ***Effi Briest***

[10] The most famous novel of another 19th century Theodor, Theodor Storm, is titled for one of these people who fails to prevent a flood in his North Sea port town. This is the first title noun of a John Millington Synge **(“singe”)**  play set in the Aran Islands in which all of Maurya's sons die by drowning.

ANSWER: **Rider**s [accept *Der Schimmel****reiter***, ***The Rider on the White Horse***, ***Riders to the Sea***]

[10] Both Theodor Storm and Theodor Fontane hailed from this European country, also the home of writers such as Alfred Döblin and Heinrich Boll **(Bool)**.

ANSWER: **Germany** [accept **Deutschland**, **West Germany**]

3. This structure was described by one official as "comparable only to the Great Wall of China." For 10 points each:

[10] Name this structure with outer barriers made of plum and acacia trees to prevent smuggling. This structure ran from the city of Burhanpur to its country's Southern coast and was at least 6 feet thick at all points.

ANSWER: **Great Hedge** of India

[10] The Great Hedge was built to block transport of this good from India's Western to Eastern half. One mass mobilization to extract this resource ended at the Gujarati city of Dandi.

ANSWER: Sea **salt**

[10] The Dandi Salt March was organized by Mohandas Gandhi, who organized to end the rule of this government that built the Great Hedge.

ANSWER: British **Raj** [prompt on British Empire]

4. A logic developed by this thinker includes the idea of *inferentia*—or entailment—that requires the connection between prepositions involved in a logical statement to be necessary and relevant. For 10 points each:

[10] Name this medieval logician and author of *Sic et Non* who is also known as the first nominalist philosopher.

ANSWER: Peter **Abelard** [or Pierre **Abélard** or **Habalaarz** apparently]

[10] Like Abelard, the inventor of this philosophical heuristic worked on the problem of universals. This principle says, in general, we should favor the simplest answer to a problem.

ANSWER: **Occam's Razor** [also accept **law of parsimony**]

[10] This other medieval logician had a logic based on the conceptions of the theoretical *logica docens* and the practical *logica utens*. This philosopher wrote several commentaries on Aristotle including his *De motibus animalium*.

ANSWER: John **Buridan** [or Johannes **Buridanus**]

5. This reaction can proceed under copper (1) catalysis and the related Balz-Schiemann reaction converts an aryl amine to an aryl fluorine via diazotization. For 10 points each:

[10] Name this radical-nucleophilic aromatic substitution that acts on an aryl diazonium salt.

ANSWER: **Sandmeyer** Reaction

[10] The Sandmeyer Reaction allows for an element of this group, often symbolized X, to be added to a benzene. Examples of this group include Fluorine and Chlorine.

ANSWER: **halogens** [also accept **group 17**]

[10] Halogen groups unusually are deactivating, but direct electrophilic aromatic substitution reactions to these two positions on an aromatic ring, rather that the meta position. Name both positions.

ANSWER: **ortho** and **para** [accept in either order]

6. This building includes a massive work in which Mary and Christ are surrounded by over 300 figures, including a portrait of the artist as Saint Bartholomew holding his own skin. For 10 points each:

[10] Identify this building in which Michelangelo painted his massive *Last Judgment* fresco, and he painted this building's ceiling.

ANSWER: **Sistine** Chapel

[10] Saint Michael wears armor and holds scales to judge the dead in this artist's *Last Judgment* triptych, which ended up in Danzig after pirates stole it.

ANSWER: Hans **Memling**

[10] This artist's *A Vision of the Last Judgement* was lost but reconstructed by the artist in a letter to Ozias Humphrey. Other paintings made by this artist depict his visions of the god Urizen as well as the Great Red Dragon.

ANSWER: William **Blake**

7. For 10 points each, answer the following about the twelve labors of Hercules..

[10] Hercules was set his labors by this King of Tiryns, his mean little cousin, who got to be a king instead of Hercules because Hera caused him to be born first. Ashamed after Heracles actually completed the twelve labors, this man tried to kill Heracles’s children.

ANSWER: **Eurystheus**

[10] With his nephew Iolaus, Hercules went to Lerna and killed this many-headed monster, which grew two new heads every time one of its heads was chopped off.

ANSWER: Lernean **Hydra**

[10] *Description acceptable*: To kill the Stymphalian birds, Heracles used his bow and arrows dipped with Hydra poison and this other object. This object was given to Hercules by Athena and frightened the birds.

ANSWER: bronze **noisemaker**s [accept **clapper**s or **rattle**s or **castanet**s or **shaker**s or any answers describing an object you shake or hit or make noise with; accept ***krotala***]

8. Debate over this legislation hinged on certain institutions that the Constitution says Congress "may from time to time ordain and establish." For 10 points each:

[10] Name this first bill ever introduced in the U.S. Senate, which also created the office of U.S. attorney general.

ANSWER: **Judiciary Act** of **1789** [or *An* ***Act to Establish the Federal Courts of the United States***; prompt with "I need the year" on Judiciary Act]

[10] Part of the Judiciary Act of 1789 was ruled unconstitutional in this 1803 Supreme Court case, a decision of the Marshall court that also established judicial review.

ANSWER: ***Marbury*** *v. Madison*

[10] Ironically, it was Marshall who had failed to deliver Marbury his commission while he was both chief justice and holder of this cabinet position. Marshall was succeeded in this post by none other than James Madison.

ANSWER: secretary of **state**

9. This man's "eloquence refin'd" is said to "Inflame the heart, and captivate the mind" in a poem describing how he "sails to Zion through vast seas of day." For 10 points each:

[10] Identify this man who is said to have "wrestled with his God by night" and "charg'd [America's] youth that ev'ry grace divine".

ANSWER: Reverend Mr. George **Whitefield**

[10] George Whitefield was eulogized by this author, a slave from West Africa who collected the aforementioned poem in her work *Poems on Various Subjects, Religious and Moral*.

ANSWER: Phillis **Wheatley**

[10] In "His Excellency General Washington", Wheatley recounts how Washington was "fam'd for thy valour, for [*this trait*] more". In another of her poems entitled "On [*this trait*]", the speaker calls it a "bright jewel in my aim" and later asks this trait to "leave me not to the false joys of time!"

ANSWER: **Virtue**

10. Answer the following related to atomic clocks for 10 points each.  
[10] This factor for an atomic clock can reach 1011 or higher. This value, which measures the energy loss due to damping within a resonant element, causes the bandwidth to *decrease* for a tuned circuit filter.  
ANSWER: **Q**uality **factor**  
[10] These devices were used in early atomic clocks and the Hydrogen version of these devices is commonly used as a reference for frequency precision. Another version of these devices consists of a microwave cavity filled with vapor made of Rubidium and Sulfur and Nitrogen gas.  
ANSWER: **maser** [accept **Hydrogen maser** or **Rubidium maser**]  
[10] This British scientist was among the first to consider using the properties of atoms for time measurement. He is probably better-known for naming a temperature scale where room temperature is around 300.  
ANSWER: Lord **Kelvin**

11. Answer some questions about different beliefs held by minority Muslim groups, for 10 points each:

[10] The Alawites, a minority group in Syria, consecrate and consume bread and this substance during a form of Mass. This substance is ordinarily banned for Muslims for being *khamr*, or an intoxicant.

ANSWER: **wine** [accept more generic terms like **alcohol**]

[10] Pakistan bans people belonging to this sect founded in Punjab from declaring themselves Muslim. They disagree with the common Quranic narrative that Jesus never died and was raised into heaven, asserting that he was in fact buried in Kashmir.

ANSWER: **Ahmadiyya** Muslim Community [accept **Ahmadi**s]

[10] The Ibadi movement popular in Oman holds this belief about the Quran's provenance. The Abbasid caliph al-Ma'mun launched an inquisition known as the "miḥna" to "ensure acquiescence in" this theological doctrine.

ANSWER: it was **created** by God [accept equivalents]

12. Answer the following about the Peasants' Revolt for 10 points each.

[10] This radical preacher stirred up support for the Revolt with his fiery sermons, one of which advocated for gender equality with the slogan "When Adam delved and Eve span, who then was the gentleman?"

ANSWER: John **Ball**

[10] This leader of the Revolt was killed at a meeting with King Richard II at Smithfield, after which the rebellion rapidly collapsed. Together with Ball and Jack Straw, he represented the peasants at that meeting.

ANSWER: Wat (Walter) **Tyler**

[10] The Peasants' Revolt is often interpreted as a reaction against a statute depressing workers' wages in the wake of an epidemic of this disease, which killed up to 1/3 of Europe's population in the late 1340s and early 1350s.

ANSWER: **Black Death** [accept **Black Plague**, or **Bubonic** Plague or **Y**ersinia **Pestis**]

13. Hawthorne described a series of novels set in this county as being "as if some giant had hewn a great lump out of the earth and put it in a glass case." For 10 points each:

[10] Name this county, the setting of a novel in which Bishop Proudie takes an ecclesiastical seat that had been reserved for Archdeacon Grantly.

ANSWER: **Barsetshire**

[10] This author wrote the Chronicles of Barsetshire, whose best-known individual book is *Barchester Towers*. This 19th century author also wrote the six novel Palliser series.

ANSWER: Anthony **Trollope**

[10] Another recurring English setting is this author's fictional Wessex which appears in this author's novels *Return of the Native* and *The Mayor of Casterbridge*.

ANSWER: Thomas **Hardy**

14. Answer some questions about inverses in mathematics for 10 points each.

[10] This number is the determinant of every non-invertible matrix. This number is also the additive identity.

ANSWER: **zero**

[10] Two points are inverses with respect to a circle if the product of their distances to the circle's center is equal to this function of the circle's radius.

ANSWER: **square** [or **second power** or equivalents that include a variable like "**n squared**"]

[10] Invertible knots can be transformed into a copy of themselves with this property reversed. This term is also used to describe the assignment of a value of positive or negative one to the equivalence classes of ordered bases of a vector space, where two bases are equivalent if the transformation between them has positive determinant.

ANSWER: **orientation**

15. This piece from a larger work begins with an arpeggiated harp accompaniment with a solo flute melody which is restated in the clarinet and then English horn. For 10 points each:

[10] Name this operatic orchestral piece. Its succeeding scene starts with two horn calls and is set in a deserted mountain. A description is acceptable.

ANSWER: **entr'acte** to act **3** of ***Carmen*** [or **overture** to act **3** of ***Carmen***, or any description of the piece that bridges act 2 and 3 of *Carmen*]

[10] Despite being set in Spain, *Carmen* is an opera in this language. Jacques Offenbach's *Orpheus in the Underworld* is also in this language.

ANSWER: **French**

[10] Carmen ultimately falls in love with this bullfighter. This character sings the "Toreador Song", "Votre toast, je peux vous le rendre" during his appearance in act 2.

ANSWER: **Escamillo**

16. In one book, this psychologist wondered if "there can be a way of really understanding the miracle of thinking" and said thinking concerns itself with visualizing "structural features." For 10 points each:

[10] Identify this psychologist who wrote *Productive Thinking* and defined the phi phenomenon.

ANSWER: Max **Wertheimer**

[10] Wertheimer was a member of this psychological school that posits that the "whole is greater than the sum of its parts" which based its ideas of perception off of a phenomenological approach.

ANSWER: **Gestalt** Psychology

[10] This term in Gestalt therapy consists of three zones of Inner, Outer and Middle and a method of directing patients to experience this phenomenon as "focusing on what is minimized or avoided" and "staying in the here and now." This term can be defined as being in touch with one's existence.

ANSWER: **Awareness** [prompt on "mindfulness"; accept "**Bewusstsein**"]

17. This leader studied theology under the sufi Jibril ibn Umar in the city of Agadez. For 10 points each:

[10] Name this Islamic reformer who, after being elected Imam of the sultanate of Gobir, radically reduced its bureaucracy and launched holy wars against its neighbors, thus establishing a "caliphate" over much of the Southern Sahara that was later ruled by his son, Muhammad Bello **(bell-o)**.

ANSWER: **Usman** **dan Fodio** [accept **Uthman** **ibn Fudi**]

[10] Usman dan Fodio established the Sokoto Caliphate among this ethnic group, the largest in modern Nigeria. This Muslim ethnic group occupies most of Northern Nigeria.

ANSWER: **Hausa**-**Fulani** [accept either]

[10] States established in 19th century West Africa such as those of Samori Toure and Usman dan Fodio are frequently named for this Islamic theological concept, frequently translated as "holy war."

ANSWER: **jihad**

18. If this opening remains patent in adulthood, it can allow paradoxical emboli to move directly from the right to the left side of the heart, potentially causing a stroke. For 10 points each:

[10] Name this opening in the fetal heart that allows blood to bypass the lungs by moving directly between the right and left atrium.

ANSWER: **foramen ovale** [or **FO**]

[10] Fetuses also have this shunt that connects the pulmonary artery to the descending aorta. After birth it usually becomes the ligamentum arteriosum, but in some people it can remain patent and cause a "machine-like" murmur.

ANSWER: **ductus arteriosus** [or **DA**]

[10] A fetus's blood can bypass the lungs because it receives oxygen from this structure that links the fetus to the uterine wall via the umbilical cord. This structure is expelled as the "afterbirth" after delivery.

ANSWER: **placenta**

19. For 10 points each, answer the following about literature set in Kolkata.

[10] Identify this author who wrote about Antar tracking L. Murugan in *The Calcutta Chromosome*. He also wrote about the trade of opium in *Sea of Poppies*, as well as other books in his Ibis trilogy.

ANSWER: Amitav **Ghosh**

[10] Estha becomes mute after being "returned" to live with his father in Kolkata in *The God of Small Things*, a novel by this Indian author.

ANSWER: Arundhati **Roy**

[10] Bi·bhu·ti·bhu·shan Ban·dho·padh·yay wrote a series of novels about this boy from rural Bengal. This boy attends college in Kolkata in *Aparajito*, the second book about him.

ANSWER: **Apu**

20. The opening slow quarter notes C, E, A played on the cello that begin this piece is intertwined with the piano playing descending sixths in a triplet rhythm. For 10 points each:

[10] Name this six movement work whose first three movements are played without pause, which mimics the four movement structure its composer used for the three other works in the same genre.

ANSWER: **Dumky Trio** [or Antonin **Dvorak**'s **piano trio** number **4** ]

[10] Dvorak also used the Dumka dance in his second work in this genre. Franz Schubert used this genre in a five movement work whose fourth movement is a set of variations on the song *Die Forelle* **(dee For-ell-uh)**.

ANSWER: **piano quintet** [prompt on quintet]

[10] Schubert's *Trout Quintet* replaced the second violin customary of other piano quintets of that era with this largest orchestra string instrument. It is the only orchestral string instrument to be tuned in fourths instead of fifths.

ANSWER: double **bass** [or string **bass** or contra**bass** or upright **bass**]