

Teterboro's Academic Packets of Intellectual Rigor

Packet 8

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Tossups

1. **This group carried out the Border Campaign, which failed since they failed to gain support from nationalists in the area of their campaign. One wing of this group developed the Long War strategy, and one leader of this group eventually died during a hunger strike in 1981. The (*) provisional wing of this group split off from its official wing in 1969, and fought in the Troubles. Prime Minister Margaret Thatcher was targeted in the failed Brighton Hotel Bombing by Patrick Magee, a member of this group. For 10 points, name this group which fought for the independence of Ireland.**

ANSWER: the Irish Republican Army

2. **To distinguish it from similar knockoffs, a 1915 design for this product was made so that it would be recognizable by feel alone. To avoid being seen with an American symbol, a white version of this product was made for a Soviet Marshal. A 1911 case in the Supreme Court argued that this product was (*) "mislabelled," and unsuccessfully sought to remove caffeine from this product. This product is produced by a company headquartered in Atlanta and until 1903 contained about 9 milligrams of cocaine per bottle. For 10 points, name this soft drink and rival of Pepsi.**

ANSWER: Coca Cola

3. **A diminished interval of this number separates the two major triads of the Petrushka chord. A cadence with this number chord shifting into the tonic chord is referred to as a perfect cadence, since the tonic is immediately preceded by the (*) dominant. This interval yields every tone of the chromatic scale when traveling clockwise along its namesake "circle." Besides unison or octave, this interval is the most stable of any interval, and one semitone larger than the tritone. For 10 points, how many notes are in a pentatonic scale?**

ANSWER: five

4. **The ELENA decelerator was built to produce a type of these things, which were studied in the ALPHA experiment at CERN. One form of this thing is used in an imaging technique which can involve the use of a form of glucose, and is often done alongside CT scans. This is the less common substance to have been formed during (*) baryogenesis as well as the less commonly occurring substance to form from pair production and beta plus decay. For 10 points, name this substance, one example of which is the positively charged positron, contrasted with normal matter.**

ANSWER: antimatter [accept positron before read]

5. **In this play, one character gives a speech notes the arbitrary nature of God, citing the public works of Puncher and Wattmann. Another character from this play presents his companion with a turnip after the latter asks for a carrot, and they disagree on whether eating more makes it taste better or worse. The protagonists of this play wonder if they should (*) hang themselves from a tree, and are informed by a messenger that a character will "surely arrive tomorrow." For 10 points, name this tragicomedy in two acts by Samuel Beckett in which Vladimir and Estragon linger for someone who never arrives.**

ANSWER: Waiting for Godot

6. **An early example of these systems was installed within every home in Lothal, and similar examples were also built along the streets in Mohenjo Daro. Historians theorize that aversion to workers that practice manual scavenging at these sites would later morph into the caste system. One of these systems known as the (*) cloaca maxima was originally built as a canal to the Tiber river, but was later covered. The Romans used latrines for these systems, which were flushed by bath waste water. For 10 points, name these systems designed for disposing of human waste.**

ANSWER: sewer systems (accept plumbing, prompt on answers indicating any sort of water treatment system)

7. **The Great Unconformity is hypothesized to have been caused by one of these events. The Huronian one of these events began after the Great Oxygenation Event replaced nearly all of the methane in the atmosphere. Milankovitch cycles caused by Earth's (*) precession may be used to predict recent examples of these events during the Pleistocene Epoch. The most recent of these events created the large quantity of lakes in Canada and Finland. For 10 points, name these very cold geological time periods in which large "sheets" covered much of the earth.**

ANSWER: ice ages (accept glaciations)

8. **This author wrote a story in which a Czech playwright is given a year by God to finish a play before being killed by firing squad. This writer described meeting a younger version of himself in *The Other*, part of his collection *The Book of Sand*. This writer's (*) *Ficciones* includes a short story in which an unfinished novel representing an infinite labyrinth where every possible outcome of an event occurs simultaneously is discovered by Dr. Yu Tsun. For 10 points, name this Argentinian author of *The Aleph* and *The Garden of Forking Paths*.**

ANSWER: Jorge Luis Borges

9. **This man hypothesized three types of molecules, differentiating them from atoms. This man's law can be derived by comparing V/n to the reciprocal of the Loschmidt constant. That law states combined the ideas of Gay-Lussac and Dalton and states that gases with equal volumes, temperatures and pressures all have the same (*) number of molecules. After being redefined from being based on the kilogram in 2019, this man's constant was no longer equal to the number of atoms in 12 grams of carbon 12. For 10 points, name this man whose number is the number of molecules of a substance in a mole.**

ANSWER: Amedeo Avogadro

10. **These beings have a namesake type of stonework making use of giant limestone boulders exemplified by the walls of Tiryns, since it seemed that only these beings had the strength to build them. One proposed explanation for the origins of these creatures comes from the fact that mastodon skull fossils (*) have a large nasal cavity for their trunk. Odysseus deceives one of these creatures into believing that his name was "nobody," after which he defeats that monster, Polyphemus. For 10 points, name these one eyed monsters from Greek myth.**

ANSWER: Cyclops

11. **Eero Saarinen designed a research complex for this man's company in Holmdel, NJ featuring a boxy design and large central atrium. The Unix operating system, solar cell, and the transistor were all invented by this man's company. This scientist's father developed the (*) Visible Speech system, which he heavily advocated and taught to students at his school for the deaf. This man's best known patent was acknowledged by the Supreme Court over Elisha Gray and Antonio Meucci's, and he also founded AT&T. For 10 points, name this inventor credited with inventing the telephone.**

ANSWER: Alexander Graham Bell (accept Bell Labs)

12. **This individual was the only one capable of seeing birds before he forced them to reveal themselves, and also used his hair to control the movement of the sun. This individual died after crawling into the night goddesses in order to make humanity immortal, during which he was skewered by (*) obsidian teeth.** An island in the southern hemisphere is known as this hero's canoe, or waka. According to another legend, this hero caught a giant fish using a magical fish hook that later became North Island. For 10 points, name this Polynesian hero who names an island in Hawaii.

ANSWER: Maui

13. **The levels of cI and Cro proteins regulate the reproduction of one type of these organisms. One family of these organisms possesses a contractile tail sheath as well as short and long tail fibres attached to its tail plate. The contraction of that sheath allows these organisms to puncture (*) peptidoglycan.** These organisms were used in the Hershey Chase experiment to prove that DNA was hereditary information, and may undergo either lysogeny or the lytic cycle. The Lambda type of these organisms infects E. coli. For 10 points, name these viruses that target bacteria.

ANSWER: bacteriophages (prompt on viruses)

14. **Many species may leave this body of water through Lessepsian migration. The eastern shores of this body of water contain its largest port city, where the Kingdom Tower is being built, while its western shores border the disputed Hala'ib Triangle. An inlet of this body of water contains the two port cities of Eilat (*) and Aqaba, and its southernmost end is the Bab-el-Mandeb, located between Djibouti and Yemen.** For 10 points, name this body of water separating Northeastern Africa from the Arabian Peninsula.

ANSWER: Red Sea

15. **In one poem, one of these things whose "hungry mouth is prest" and "looks at God all day" unlike poems "made by fools like me" can only be made by God. These things "bowers" the prison of the narrator in a poem by Samuel Taylor Coleridge. Another poem about these objects describes how an action (*) "doesn't bend them down to stay as ice-storms do" and ends remarking its "good both going and coming back. one could do worse than be a swinger" of these objects.** For 10 points, name these plants described by Robert Frost in "Birches."

Answer: trees (accept birches)

16. **One leader from this region made a namesake donation which allowed for the creation of the Papal States. Another king of this region introduced the Salic Code, which forbade daughters from inheriting land. That leader, Clovis I, was the first to unite the tribes of this region and convert to Christianity, founding the Merovingian (*) Dynasty.** A later ruler of this region, Pepin the Short, founded the Carolingian Dynasty and fathered Charlemagne. For 10 points, name this European country once known as Gaul and ruled by the Franks.

ANSWER: France (accept Francia or Gaul before mention)

17. **One three dimensional work in this form displays a blue salamander with orange stripes perched adjacent to a staircase, and was constructed for Park Guell by Antoni Gaudi. Another example of these works depicts a battle with spears pointing towards the top left behind the concerned Darius III, who faces (*) Alexander the Great on his horse.** That work of this type was discovered in the House of the Faun in Pompeii. Justinian the Great built many buildings decorated with these structures. For 10 points, name these artworks formed by tiling together small fragments of glass or stone.

ANSWER: mosaics

18. **This man discussed a problem asking if a blind person could distinguish objects by sight if he could distinguish them by feel, establishing primary qualities like shape from secondary qualities like color. In one work by this thinker, he notes that words stand for nothing except for the ideas that use them. This man described the man's right to (*) "life, liberty and estate" in another work, and also described how the mind begins as a blank slate or "tabula rasa." For 10 points, name this English thinker who wrote *Two Treatises of Government* and *An Essay Concerning Human Understanding*.**

ANSWER: John Locke

19. **In one short story, the mark of war on nature is represented with an embrasure and muzzle of a brass cannon overlooking this body of water. One character notes that while this body of water is "racing madly," a piece of dancing driftwood seems to move sluggishly in it. After sabotaging a (*) railroad on a structure over this body of water, one character imagines himself escaping 30 miles through the woods back to his plantation and seeing his wife. Peyton Farquhar dies by hanging over this body of water. For 10 points, name this stream, the setting of an Ambrose Bierce short story.**

ANSWER: Owl Creek (accept An Occurrence at Owl Creek Bridge, accept any answer indicating the body of water under Owl Creek Bridge too)

20. **This set is partitioned and used to construct another set using Dedekind Cuts. Each element of this incomplete set can be expressed as an ordered pair, mapped on a table and counted diagonally to show that this set is countably infinite. This set is denoted with a capital letter (*) Q. One proof by contradiction by Euclid showed that the square root of two does not belong to this set since it couldn't be expressed using two relatively prime integers. For 10 points, name these numbers which are able to be expressed as a fraction of two integers.**

ANSWER: rational numbers

Bonuses

1. Some of science's greatest discoveries would've been impossible without lab equipment! For 10 points each:
 - [10] The Erlenmeyer example of these devices have a roughly conical shape with a narrow neck to allow for the contents to be mixed without spilling.
ANSWER: **flasks**
 - [10] These glass tubes contain a stopcock near the bottom and are graduated. They are useful for providing known volumes of a liquid.
ANSWER: **burette**
 - [10] For observing extremely small objects, using these devices with transmission and scanning types may be useful. These devices focus a high energy beam of particles on a sample for imaging.
ANSWER: **electron microscope** (accept **transmission electron microscopes** or **scanning electron microscopes**, prompt on **microscope**)

2. The frame story of this novel is told by Douglas, who reads a manuscript on Christmas Eve about the siblings Miles and Flora, who live in a summer house in Essex. For 10 points each:
 - [10] Name this Henry James novel about a governess who encounters Peter Quint before the death of Miles in her arms.
ANSWER: ***The Turn of the Screw***
 - [10] In *The Turn of the Screw*, one of these entities disappears after the death of Miles. Two of these things, who formerly had a relationship and worked at the house, talk to Flora and Miles.
ANSWER: **ghosts** (accept equivalents like **ghouls**, **apparitions** etc.)
 - [10] In Dickens' A Christmas Carol, the ghost of Christmas Past talks to Scrooge and shows him a christmas party hosted by this jolly former boss of his, who is kind and generous to his employees.
ANSWER: Mr. **Fezziwig**

3. These structures were during both the Woodland and Mississippian Period, and the largest example was over 30 meters tall. For 10 points each:
 - [10] Name these structures built by namesake North American cultures, a large serpentine example of which was built in the shape of a serpent.
ANSWER: **mounds**
 - [10] The largest mound, Monks Mound, was built in this prehistoric city in Illinois. Inhabitants of this city on the Mississippi river played the game chunky.
ANSWER: **Cahokia**
 - [10] The game of chunky involved throwing these weapons where players expected the stone to land. Atlatls were used to aid in the throwing of these weapons by many native american cultures.
ANSWER: **spears**

4. Contrary to popular belief, the hierarchy of carvings on these structures does not correspond to the subject's importance. For 10 points each:
- [10] Name these wooden structures carved by the peoples of the Pacific Northwest to illustrate their family histories.
- ANSWER: **Totem Poles**
- [10] These creatures may only be depicted on the top of totem poles. These creatures are considered to be the most powerful spirits and are thus shown with wings outstretched to symbolize strength.
- ANSWER: **Thunderbirds**
- [10] Sometimes, totem poles are made specifically for this purpose. The Seward Pole in Alaska was constructed for this purpose after its namesake refused to bring food for a potlatch, and thus possesses a red nose and ears.
- ANSWER: **humiliation** (accept equivalents)
5. This region contains a massive, circular eroded dome commonly referred to as its "eye." For 10 points each:
- [10] Name this largest hot desert in the world.
- ANSWER: **Sahara** Desert
- [10] The north of this country is dominated by the arid Sahara desert. In contrast, this country's south contains the Sahel and its namesake lake, although that lake has shrunk by over 90% in recent years.
- ANSWER: **Chad**
- [10] The northern portion of Chad contains this mountain range that is home to the Toubou people.
- ANSWER: **Tibesti** Mountains
6. A civil engineer is contemplating ways of building high speed rail. For 10 points each:
- [10] One option is to design one of these train systems which may use an electromagnetic suspension system to eliminate friction between the train and the track.
- ANSWER: **Maglev** trains (prompt on magnetic levitation)
- [10] Our engineer friend may use a variety of brakes in his high speed rail system that utilizes induction to create this effect inside a conductor that dissipates heat.
- ANSWER: **eddy currents**
- [10] The engineer will install an engine in the train in which this process occurs to generate energy to travel. This reaction is the burning and oxidation of a fuel, usually gasoline or diesel.
- ANSWER: **combustion**
7. The epic poem of one country from this region, Lacplecsis, tells the story of a hero who kills a bear with his bare hands. For 10 points each:
- [10] Name this region in Northern Europe on a namesake body of water where some pagans follow the religion of Romuva.
- ANSWER: the **Baltics** (or **Baltic** States, accept the **Baltic** Sea)
- [10] Adherents of the similar Rodnovery religion, which believes in the supreme god Rod whose aspects are responsible for all phenomena, mostly hail from this eastern european people group. Their namesake language group includes Russian, Czech, and Polish.
- ANSWER: **Slavs** (accept **Slavic** Languages)
- [10] Both Rodnovery and Romuva involve the worship of these family members, which some other neo-pagans and celtics may do so on Samhain, which later developed into Halloween.
- ANSWER: **ancestors** (prompt on ghosts)

8. This quantity is typically measured using a FICO score, which ranges from 300 to 850. For 10 points each:
 [10] Name this metric calculated based on a person's history of repayment and debt levels.
 ANSWER: **credit score**
 [10] For some credit cards, this quantity is pledged as security to repay the loan. If the credit card debt is not repaid, this quantity may be seized by the lender.
 ANSWER: **collateral**
 [10] In order to incentivize customers to use their credit cards, many companies use these programs in which money is paid to the customer based on how much money they have spent on various things.
 ANSWER: **cashback**
9. The title character of this work is given the commoner surname of Minamoto, and becomes an officer after his removal from the line of succession. For 10 points each:
 [10] Name this novel detailing the aristocratic life of the title Japanese noble, whose son Reizei becomes emperor.
 ANSWER: **Tale of Genji**
 [10] The last 10 chapters of *Tale of Genji* are collectively known by this name. In this section, Genji's grandnephew Kaoru and grandson Niou compete over several princes before the story abruptly ends.
 ANSWER: **Uji** Chapters
 [10] Traditionally, since *Tale of Genji* was written by an author belonging to this group, it was written using the Japanese kana script rather than the Chinese kanji script.
 ANSWER: **women** (accept equivalents)
10. You're Ghana love this bonus! For 10 points each:
 [10] Between the 17th and 20th centuries, Ghana was ruled by this kingdom founded by the Akan people.
 ANSWER: **Ashanti**
 [10] The Ashanti people were known for their trade of this substance, which lent its name to Ghana's former name of "this substance" coast. Along with slaves and ivory, this precious mineral was the main export of the Ashanti.
 ANSWER: **Gold**
 [10] The main symbol of power for the Ashanti was this seating implement, which needed to be lifted on a blanket so that it would not touch the ground. Their loss in the war for this throne resulted in the Ashanti Kingdom becoming a British protectorate.
 ANSWER: the **Golden Stool**
11. At first, this law was used to prove the conservation of momentum, although it has since been found to be less fundamental than the conservation law. For 10 points each:
 [10] Name this law which states that the normal force of you sitting on your chair is equal in magnitude but opposite in direction to your weight's applied force on the chair.
 ANSWER: **Newton's Third** Law
 [10] One application of Newton's Third Law is this principle, which states that the upward buoyant force is equal to the weight of the fluid displaced by a submerged object.
 ANSWER: **Archimedes' Principle**
 [10] Newton's third law helped this German scientist formulate her first theorem, which states that every symmetry has a conservation law.
 ANSWER: Emmy **Noether**

12. For 10 points each name some dictators from the Caribbean:
- [10] This Dominican dictator killed up to 30,000 haitians during the Parsley massacre. Hundreds of places were renamed for this man in the Dominican Republic due to his personality cult.
ANSWER: Rafael **Trujillo**
- [10] This Haitian leader created the Tonton Macoute, a secret police force which persecuted his opponents. This president for life earned one of his nicknames from his profession in the medical field.
ANSWER: Francois **Duvalier** (accept **Papa Doc**)
- [10] This dictator of Cuba was eventually succeeded by his brother Raul. This cuban dictator took power after overthrowing Fulgencio Batista.
ANSWER: Fidel **Castro**
13. In one island in this country, practitioners of the kecak dance chant “chak” and move their limbs in a circle in order to mimic monkeys. For 10 points each:
- [10] Name this island country famous for dances performed by the people of Bali.
ANSWER: **Indonesia**
- [10] In Bali, this form of traditional ensemble is often performed using metallophones, xylophones and hand drums. Heterophony and other elements of this traditional orchestra inspired Debussy’s *Pagodes* as well as Satie’s *Gnossiennes*.
ANSWER: **gamelans**
- [10] Most gamelans also typically include the use of a suling, a bamboo one of these instruments, to play a sustained melody. These instruments are larger and lower pitched than piccolos.
ANSWER: **flute**
14. Two poets from this country wrote in the contrasting conceptismo and culteranismo styles. For 10 points each:
- [10] Name this country where the two golden age poets Francisco de Quevedo and Luis de Gongora feuded.
ANSWER: **Spain**
- [10] Gongora often attacked this part of Quevedo’s face in their feuds. In one poem, it was described as a “badly positioned sundial” and used to describe Quevedo as a “swordfish with a long beard.”
ANSWER: his **nose**
- [10] Description acceptable. Unlike Gongora, Quevedo stressed the importance of this property in his writing, as opposed to the intricate nature of Gongora’s Solitudes.
ANSWER: **Conciseness** (accept similar answers and any answer indicating **simplified language**)
15. In this work, the author describes Europe’s colonial dominance as a result of geographic luck. For 10 points each:
- [10] Name this work which begins with a conversation with a New Guinea man about cargo. It lists three title advantages possessed by Europeans that allowed them to conquer others around the world.
ANSWER: **Guns, Germs, and Steel**
- [10] According to *Guns, Germs, and Steel*, this man’s victory at Cajamarca could be attributed to better domesticated animals. Since the Inca Empire lacked livestock other than llamas, they were more susceptible to diseases like smallpox.
ANSWER: Francisco **Pizarro**
- [10] *Guns, Germs and Steel* was written by this professor from UCLA, who also analysed the collapse of civilizations in *Collapse*.
ANSWER: Jared **Diamond**

16. The forked line method can be used as an alternative to these diagrams. For 10 points each:
- [10] Name these diagrams used to predict the genotypes of a given mating. These diagrams show the possible combinations of alleles from the two parents.
ANSWER: **Punnett Square**
- [10] Punnett squares allow you to find the possible alleles based on this law, which states that the alleles received for one gene does not affect the allele received for another gene. It is violated in genetic linkage.
ANSWER: Law of **Independent Assortment**
- [10] In this form of dominance, one allele is not completely expressed over the other. In snapdragons, this form of dominance results in pink flowers when red flowers are bred with white flowers.
ANSWER: **incomplete** dominance
17. This state existed for 25 days until it was annexed by the US after William Ide captured Sonoma. For 10 points each:
- [10] Name this short lived state founded following the Bear Flag Revolt.
ANSWER: the **California** Republic
- [10] This first candidate of the republican party, often nicknamed "pathfinder," aided in the independence of the California Republic. He was later court martialed by Stephen Kearney.
ANSWER: John Charles **Fremont**
- [10] The California Republic was established during this larger conflict between two namesake countries. This war was ended by the Treaty of Guadalupe Hidalgo after Winfield Scott captured one participant's capital city.
ANSWER: the **Mexican-American** War
18. In this show, Emperor Pilaf's wish for world domination is interrupted, and is defeated after the protagonist looks at the full moon. For 10 points each:
- [10] Name this series in which the seven title objects are used to summon the dragon Shenron, who is able to grant any wish, including eternal youth for King Piccolo and comfortable women's underwear by Oolong.
ANSWER: **Dragon Ball** (do not accept or prompt on Dragon Ball Z, Dragon Ball GT or Dragon Ball Super)
- [10] In Dragon Ball and its sequels Dragon Ball Z, Dragon Ball GT and Dragon Ball Super, this saiyan warrior is the protagonist. This fighter defeats the Red Ribbon Army, Pilaf, Piccolo, Frieza and Buu over the course of the shows.
ANSWER: Son **Goku** (or **Kakarot**)
- [10] Goku learns this signature attack of his from Master Roshi, a wave a blue energy emitted from his cupped hands. Goku's son Gohan uses this attack to defeat Cell.
ANSWER: **Kamehameha**
19. These masses can form due to orographic lifting over mountains. For 10 points each:
- [10] Examples of these masses of condensed water vapor include the cumulus and cumulonimbus types.
ANSWER: **clouds**
- [10] Clouds are able to form due to the presence of these microscopic particles that serve as "seeds" onto which the water vapor condenses.
ANSWER: cloud **condensation nuclei** (or **CCNs**, prompt on **cloud seeds**)
- [10] If clouds are forming, the air must be below this temperature in which it becomes saturated with water vapor.
ANSWER: the **dew point**

20. For 10 points each, answering some of the following about some songs in literature:

[10] The title character of this poem claims that he has “heard the mermaids singing, each to each.” This poem ends with the assertion that “we drown” once “human voices wake us.”

ANSWER: “The Love Song of J. Alfred Prufrock”

[10] In this poem, the title Ojibwe character converts to Christianity after the death of his love Minnehaha.

ANSWER: “Song of Hiawatha”

[10] The speaker of this poem in the collection *Leaves of Grass* sounds his “barbaric yawp” and claims “I am large, I contain multitudes.”

ANSWER: “Song of Myself”