

TAILS: TAG Academic Introductory Level Set 2020-2021

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Packet 5

1. **The Kepler conjecture describes the densest packing of these shapes in three-dimensional space. The coordinate system based on these shapes is based on two angles and a radial distance. The surface area of these shapes is four (*) pi times the radius squared, and the volume is four-thirds pi times the radius cubed. Cross sections of these shapes are circles. For ten points, name these 3D shapes which resemble a ball.**

ANSWER: **spheres** [prompt on **ball** before mention]

<Other Science - Pamurthy>

1. A character in this story hides her cat Pitty Sing in a basket in the back of a car to secretly take him along on a vacation. For ten points each:

[H] Name this story about an outlaw called “The Misfit” who kills the grandmother and the rest of Bailey’s family after they get stranded due to a car crash.

ANSWER: “A **Good Man is Hard to Find**”

[M] “A Good Man is Hard to Find” was written by this Southern Gothic author of the stories “Everything That Rises Must Converge,” “Parker’s Back,” and “Good Country People.”

ANSWER: Flannery **O’Connor**

[E] O’Connor was born in this state’s city of Savannah. For a summer vacation, the family in “A Good Man is Hard to Find” travel to Florida from this state’s capital of Atlanta.

ANSWER: **Georgia**

<Short Fiction - Yoo>

2. **In a game called *The Lost Levels*, this character is able to jump higher and farther than his counterpart. In a game starring this character, Professor E. Gadd supplies him with the Poltergust 3000, a modified vacuum cleaner that sucks up (*) ghosts in this character’s *Mansion*. This character is often the second player in games starring his red-wearing brother. For ten points, name this younger, taller, green-wearing brother of Mario.**

ANSWER: **Luigi**

<Popular Culture - Yoo>

2. This figure was given grace by Aphrodite, the knowledge of fine crafts by Athena, and a keen mind by Hermes. For ten points each:

[M] Name this first woman in Greek mythology. A jar often incorrectly called “[this figure’s] Box” was opened to release into the world all evils known to man until only hope remained.

ANSWER: **Pandora**

[H] Pandora was created by Hephaestus as a punishment for mankind after this figure stole the gift of fire from the gods. This figure is credited with creating mankind from clay in Greek mythology.

ANSWER: **Prometheus**

[E] Pandora’s daughter Pyrrha (PEER-uh) and her husband Deucalion were the only people to survive one of these events caused by Zeus. Noah is said to have made an ark to survive one of these events lasting for 40 days.

ANSWER: great **flood** [accept **deluge**]

<Mythology - Yoo>

3. **This man started the Cuban Thaw in an attempt to normalize relations with the isolated country. This president organized the Trans-Pacific Partnership and, with his Secretary of State John Kerry, negotiated the**

Iran Nuclear Deal. This president ordered the killing of (*) Osama bin Laden. For ten points, name this 44th president of the United States who passed the Affordable Care Act and began his first term in 2008.

ANSWER: Barack **Obama** [or Barack Hussein **Obama** II]

<US History - Havlick>

3. The Betterton-Kroll process is used to extract bismuth from alloys containing this element. For ten points each:
[M] Name this element that was used in pipes until its toxicity was discovered. Today, it is still used in acid car batteries.

ANSWER: **lead** [accept **Pb**]

[H] Thomas Midgley used lead to decrease engine knock and to boost this gasoline rating. More premium gasoline generally has a higher value of this rating shown on gas pumps.

ANSWER: **octane** rating

[E] Lead was once found in this substance, until it was discovered that it would crack and contaminate the environment. Watercolors are a type of art in which this substance is applied to canvas with brushes.

ANSWER: **paint**

<Chemistry - Pamurthy>

4. **One branch of this river is sourced from Lake Tana in Ethiopia. The Al-Sudd Swamplands come after the city of Juba in the course of this river's "White" branch, which joins its "Blue" branch near Khartoum. This river's source is (*) Lake Victoria and its delta, between the Damietta and Rosetta branches, empties into the Mediterranean at Alexandria. For ten points, what long river flows through Sudan and Egypt?**

ANSWER: **Nile** River

<World Geography - Havlick>

4. In one episode of this TV show, Thea is reanimated by Ra's al-Guhl. For ten points each:

[M] Name this TV show in which a hero is helped by characters like Spartan and Black Canary. The show is titled after a weapon used by its green-cloaked main character.

ANSWER: **Arrow**

[H] This is the civilian alter ego of the superhero Arrow. He is the son of a billionaire in Starling City and was stranded on the island of Lian-Yu for five years.

ANSWER: **Oliver Queen** [accept either underlined portion]

[E] The Arrow and his friend the Flash were created by groups of comic book writers working for this company, which is a rival of Marvel.

ANSWER: **DC** Entertainment, Inc.

<Popular Culture - Havlick>

5. **It's not Norway, but the music of this country inspired elements of the song *Norwegian Wood* by the Beatles. Music from this country is based on melodies called ragas and patterns called talas. The national anthem of this country is *Jana Gana Mana*, which was originally composed in (*) Bengali. For ten points, name this home country of Ravi Shankar, who played the sitar.**

ANSWER: **India** [or Republic of **India** or **Bharatiya** Ganarajya]

<Other Fine Arts - Pamurthy>

5. During a battle in this war, a commander told his troops not to fire until they “see the whites” of the enemies’ eyes. For ten points each:

[E] Name this war which featured the Battle of Bunker Hill. In this war, the American colonies fought for independence from the British.

ANSWER: American **Revolutionary War** [accept **American Revolution**]

[M] Following the Revolutionary War Battles of Germantown and Brandywine, troops retreated to this Pennsylvania encampment. Washington’s army had to suffer through the harsh winter of 1777 in this location.

ANSWER: **Valley Forge**

[H] At Valley Forge, this Prussian drill master developed an efficient training method for soldiers, which focused on usage of bayonets.

ANSWER: Baron von **Steuben** [accept Baron Friedrich Wilhelm August Heinrich Ferdinand Freiherr von **Steuben** or Baron Friedrich Wilhelm Ludolf Gerhard Augustin Freiherr von **Steuben**]

<US History - Singer>

6. In a novel by this author, a note written by Arne Saknussemm (ARN sack-NOO-sem) can be read in a mirror, and is used by Professor Lidenbrock to help find a route into a volcano in western Iceland. In another novel by this author, Ned Land and Pierre Aronnax are shown the secrets of a (*) submarine called the *Nautilus* by Captain Nemo. For ten points, name this French author of *Journey to the Center of the Earth* and *Twenty Thousand Leagues Under the Sea*.

ANSWER: Jules Gabriel **Verne**

<Long Fiction - Yoo>

6. This physicist proposed a thought experiment in which a radioactive substance would cause hydrocyanic acid to be released with probability one-half into a box with a cat inside. For ten points each:

[M] Name this physicist, who used that thought experiment to demonstrate that the cat inside would be in a state of quantum superposition between alive and dead.

ANSWER: Erwin **Schrödinger** [or Erwin Rudolf Josef Alexander **Schrödinger**]

[H] In another physics thought experiment, the Second Law of Thermodynamics is hypothetically violated by this small creature, which uses a door to sort fast and cold gas molecules into separate chambers.

ANSWER: **Maxwell’s Daemon**

[E] The Laplace’s (la-PLOSS’s) Demon thought experiment implies that knowing this property and momentum for a particle, could determine its history and future. This property defines where a particle is, relative to its surroundings.

ANSWER: **position** [accept **location** and other equivalents]

<Physics - Farner>

7. This leader built a causeway to the city of Tyre when unable to seige it traditionally. The homesickness of this leader’s troops forced him to turn back at the Hyphasis River during his invasion of India. This ruler defeated the Achaemenid Empire by killing Darius III. This pupil of (*) Aristotle was the son of Phillip II of Macedon. For ten points, name this “Great” Macedonian king who conquered a massive ancient empire.

ANSWER: **Alexander** the Great [or **Alexander III** of Macedon]

<Ancient History - Gray>

7. During the immigration boom of the late 19th and early 20th centuries, unrest in Europe led millions to go through this island to get to the United States. For ten points each:

[M] Name this island located halfway between New York and New Jersey, home to the main historical immigration point for the East Coast.

ANSWER: **Ellis** Island

[E] Immigrants entering at Ellis Island would often see this structure while entering. A gift from France, this large green statue depicts a woman holding a tablet and a torch.

ANSWER: Statue of **Liberty** [or **Liberty** *Enlightening the World*, or *La Liberté éclairant le monde*]

[H] This other island was known as the “Ellis Island of the West.” Located in California’s San Francisco Bay, it saw most of its immigrants from China and Japan.

ANSWER: **Angel** Island

<US Geography - Havlick>

8. **This poet compared desire and hate to “Fire and Ice”, and wrote of “stop[ping] without a farmhouse near” in a poem that ends by repeating “And miles to go before I sleep.” This poet of “Stopping by Woods on a Snowy Evening” wrote about “two (*) roads” that “diverged in a yellow wood” where the narrator decides to take “the one less traveled by.”** For ten points, name this New England regionalist poet of “The Road Not Taken.”

ANSWER: Robert Lee **Frost**

<Poetry - Yoo>

8. In J. M. W. Turner’s *Rain, Steam and Speed*, a white rabbit runs alongside one of these vehicles in the distance. For ten points each,

[E] Name this type of vehicle, a series of railroad cars moved as a unit, that is depicted in Edouard Manet’s *The Railway*.

ANSWER: **train**

[H] This surrealist artist’s *Time Transfixed* includes a train exiting a fireplace. This Belgian artist’s work titled *Treachery of Images* depicts a pipe, but says “This is not a pipe.” at the bottom.

ANSWER: René **Magritte**

[M] This impressionist artist practiced en plein air, the act of painting outdoors, by painting the Gare Saint-Lazare (gahr sahnt-lah-ZAR) Train Station. This French artist also painted *Impression: Sunrise* and a series of about 250 Water-Lilies.

ANSWER: Claude **Monet**

<Visual Fine Arts - Leakey>

9. **Two scientists with this last name studied Rochelle salts to discover piezoelectricity (pee-AY-zo-electricity). Another scientist with this last name who shared a Nobel Prize in Physics with Henri Becquerel (bek-uh-REL) discovered an element in the ore pitchblende that she named after her home country, (*) Poland. That scientist, the only woman to win the Nobel Prize twice, shared one of those prizes with her husband Pierre. For ten points, give the last name of chemist Marie.**

ANSWER: **Curie** [accept Marie **Curie** or Pierre **Curie** or Paul-Jacques **Curie**]

<Chemistry - Pamurthy>

9. This author wrote about Amory Blaine, a Princeton student who declines into poverty and is rejected by Rosalind Connage, in his novel *This Side of Paradise*. For ten points each:

[H] Name this Jazz Age author. The title character of another novel by this author is shot by George Wilson in a swimming pool after being wrongly accused of Myrtle's death by Tom Buchanan.

ANSWER: F. Scott **Fitzgerald** [accept Francis Scott Key **Fitzgerald**]

[M] Tom Buchanan appears in this so-called "Great American Novel" by Fitzgerald narrated by Nick Carraway. The title character of this novel loves Daisy Buchanan and gazes at a green light at her house across the bay.

ANSWER: *The **Great Gatsby***

[E] *The Great Gatsby* is set in the towns of West Egg and East Egg on Long Island in this American city's suburbs.

ANSWER: **New York** City [accept **NYC**]

<Long Fiction - Yoo>

10. **A figure circled this deity and his wife to win a race with the prize of a magic mango, proposed by this god. This god is depicted with matted hair and a crescent moon on his head. After this god swallowed halahala created during the churning of the ocean, this god's throat turned (*) blue due to the potency of the poison.** For ten points, name this three-eyed destroyer deity who makes up the Trimurti with Brahma and Vishnu.

ANSWER: **Shiva** [accept **Mahadeva**]

<Mythology - Yoo>

10. According to legend, this city was founded by twin boys raised by a she-wolf, Luperca, who had saved them from drowning in a river. For ten points each:

[E] Name this city mythically founded by Romulus and Remus.

ANSWER: **Rome**

[M] King Amulius allegedly sent Romulus and Remus to drown in this river. This river is the largest in Rome and meets the Mediterranean at the suburb of Ostia.

ANSWER: **Tiber**

[H] According to legend, the first seven rulers of Rome held this title; Romulus was the first and Tarquin the Proud was the last.

ANSWER: **king** of Rome [or **rex** Romae]

<Ancient History - Havlick>

11. **One-third of the Earth's surface is covered in these biomes, the largest of which is in Antarctica. Other than tundras, these biomes have the lowest biodiversity of any biome, and wind in these biomes can form ergs or (*) dunes.** Water seeping from aquifers in these biomes can provide the conditions for an oasis to form. For ten points, name this biome characterized by low precipitation, which are often sandy.

ANSWER: **desert**

<Biology - Pamurthy>

11. These beings are channeled by shrine maidens called *miko* during *kagura* dances. For ten points each:

[H] Give the original-language term for these beings central to prayer in Shintoism. These beings, examples of which are Izanagi, Izanami, and Amaterasu (AH-mah-ter-AH-soo), are worshipped in Shinto shrines.

ANSWER: **kami**

[E] Shintoism is primarily practiced in this Asian country. Shinto adherents in this country go to shrines like the ones in Tokyo or Kyoto on New Year's Day to pray to *kami* (kah-mee) for good luck in the coming year.

ANSWER: **Japan** [accept **Nippon** or **Nihon**]

[M] During New Year's shrine visits, called *hatsumode* (haat-soo-MOH-day) in Japanese, people can be seen wearing this traditional Japanese garment. These square-sleeved garments are almost always worn with a belt called an *obi*.

ANSWER: **kimonos**

<Religion - Yoo>

12. **One ruler of this empire named Aurangzeb re-established the jizya tax to encourage conversion to the religion it followed. This empire was founded by Babur and reached its zenith under Akbar. One ruler of this empire built a large white marble (*) mausoleum in the city of Agra for his wife Mumtaz. For ten points, Shah Jahan, commissioner of the Taj Mahal, ruled what Indian Islamic empire?**

ANSWER: **Mughal** Empire [or **Gurkani**]

<World History - Havlick>

12. The "ring" type of these structures can occur within collapsed volcanic calderas. For ten points each:

[M] Name these structures that are classified based on the movement of their hanging walls in relation to their footwalls. Types of these structures include normal, reverse, and strike-slip.

ANSWER: **faults**

[E] Faults often occur along transform boundaries, which are located between two of these structures. These sections of the Earth's crust move in a process known as continental drift.

ANSWER: tectonic **plates**

[H] The Vine-Matthews-Morley hypothesis proposed this cause of continental drift. This process occurs when new oceanic crust is created at mid-ocean ridges and gradually moves away from the ridge.

ANSWER: **seafloor spreading** [prompt on "spreading"]

<Other Science - Pamurthy>

13. **In the Davisson-Germer experiment, a diffraction pattern produced by these particles showed their wave-particle duality. In Thomson's atomic model, these particles are like plums in a plum pudding, while in Bohr's model they are in shells around the nucleus. These particles are (*) shared in covalent bonds and exchanged in ionic bonds. For ten points, name these small negatively-charged subatomic particles.**

ANSWER: **electrons**

<Physics - Pamurthy>

13. In 1191, Richard I of England conquered Cyprus from the Byzantines while searching for his wife Berengia. For ten points each:

[M] Richard did so while on the third instance of these military campaigns. These campaigns were first called by Pope Urban II to reclaim the Holy Land for Christendom, but most of them failed.

ANSWER: **Crusades** [accept **Third Crusade**]

[E] The Crusades that Richard fought in pitted Islamic forces against Christian forces for control of this holy city. Today split into four quarters, this city is a hotbed for contention between Palestinians and Israelis.

ANSWER: **Jerusalem**

[H] Throughout his campaigns, Richard mostly faced, and lost to, this military leader, who retook Jerusalem for Muslim forces before the Third Crusade.

ANSWER: **Saladin**

<World History - Havlick>

14. **In one of this composer's operas, Violetta asks Alfredo to love her forever before dying of tuberculosis; that opera is *La Traviata*. Another of this composer's operas premiered using twelve live elephants for its "triumphal march." In that same opera by this man, (*) Radames (ruh-DAH-miss) falls in love with the title character and is buried alive with her at its end. For ten points, name this composer of an opera set in Egypt about an Ethiopian princess, *Aida*.**

ANSWER: Giuseppe **Verdi**

<Auditory Fine Art - Leakey>

14. For ten points each, answer some questions about cosmic latte, the average color of the universe.

[H] The discovery of cosmic latte was not the goal of the study that accomplished it. The study was actually intended to study these lines created by absorption and emission of light at certain frequencies.

ANSWER: **spectral** lines

[E] Despite receiving less votes than names like "Astronomer Almond" or "Big Bang Beige," researchers chose to name the color Cosmic Latte, claiming to be biased by this stimulant in coffee that keeps you awake.

ANSWER: **caffeine**

[M] Though cosmic latte is a shade of beige, the average color of the universe is shifting more towards this color. The light from stars reaching us is blue, though by now those stars may have changed into giants of this color.

ANSWER: **red**

<Other Academic - Pamurthy>

15. **These animals are the national animal of Scotland, and they name a Starbucks frappuccino made with mango syrup and pink and blue powder. Mistaking rhinoceroses for these animals, Marco Polo described them as ugly. Their defining body part, thought to have medicinal values, is called an (*) alicorn. Narwhals are called "[these animals] of the sea."** For ten points, name these mythical creatures, horses with a single horn.

ANSWER: **unicorns**

<Other Academic - Pamurthy>

15. The last stanza of a poem by this author states that “We must confess that we are the possible” and that “We are the miraculous, the true wonder of this world.” For ten points each:

[M] Name this American author whose poetry collection *Just Give Me a Cool Drink of Water 'fore I Diie* was nominated for a Pulitzer. This author also wrote works like *I Know Why the Caged Bird Sings*.

ANSWER: Maya **Angelou**

[E] *I Know Why the Caged Bird Sings* is one of seven of these works by Angelou about her own life. *Mom & Me & Mom*, the most recent of these works by Angelou, describes her personal relationship with her mother.

ANSWER: **autobiographies**

[H] This poem by Angelou opens with the line “A Rock, A River, A Tree” and ends by describing a rock’s cry of “You may stand upon me, / But do not hide your face.” Angelou read this poem at Bill Clinton’s inauguration.

ANSWER: “**On the Pulse of Morning**”

<Mixed Literature - Yoo>

16. **This event is called *frashokereti* (FRA-sho-kuh-REH-tee) in Zoroastrianism. During an event of this kind, Frigga experiences her second sorrow when her husband is swallowed whole by Fenrir. Seven trumpets are sounded during this event in the Book of Revelation, and the (*) Four Horsemen of Conquest, War, Famine, and Death serve as its harbingers.** For ten points, name this event in many religions wherein the Earth is destroyed.

ANSWER: the **end** of the **world** [accept the **apocalypse** or the **end times** or the **Second Coming**; accept equivalent answers; prompt on **Armageddon** or the **Rapture** or **Ragnarok** or **doomsday** or **Judgement Day**]

<Religion - Yoo>

16. William the Silent first led this country to its independence. For ten points each:

[M] Name this country which fought the Eighty Years War for independence from Spain. Provinces in this country include North Holland and Zeeland (ZAY-lont).

ANSWER: The **Netherlands**

[E] During the golden age of the Netherlands, their East India Company, the VOC, shipped spices from modern-day Indonesia to this port city. This city is now the capital of the Netherlands.

ANSWER: **Amsterdam**

[H] Extensive shipping created an economic bubble due to the decline in value of these signature Dutch flowers. These flowers are still cultivated in the Netherlands today, making it the largest flower exporter in the world.

ANSWER: **tulips**

<European History - Havlick>

17. **In her youth, this character was attacked by a swarm of spiders in her room that would hide every time her stepmother came in. This character’s cousin Magnus is a son of Freyr and first appeared in *The Sword of Summer*. Thalia Grace and (*) Luke Castellon found this character when she was just seven and brought her to Camp Half-Blood.** Rick Riordan created, for ten points, what daughter of Athena in the Percy Jackson books?

ANSWER: **Annabeth** Chase [prompt on just **Chase**]

<Children’s Literature - Yoo>

17. For ten points each, name some pieces of computer hardware.

[E] The QWERTY layout is the most widely used in these pieces of hardware because it is deliberately inefficient to reduce jamming. These devices are used to type numbers and letters into computers.

ANSWER: **keyboard**

[M] These devices contain components like the ALU and registers, and their clock rate is typically measured in gigahertz. These devices execute instructions and do most of the computations for computers.

ANSWER: **CPU** or **central processing unit** [accept **central processor** or **main processor** or just **processor**]

[H] These devices with a similar name to CPUs are specialized circuits that use numerous computing units to operate on pixels. These devices accelerate the creation of images for output to a display device.

ANSWER: **GPU** or **graphics processing unit** [accept **VPU** or **visual processing unit**; prompt on **integrated graphics** or **video card** or **graphics card** or **display card** or **graphics adaptor** or **display adaptor**]

<Other Science - Pamurthy>

18. In January of 2020, a plane carrying 63 citizens of this country was shot down by the IRGC shortly after its takeoff from an international airport in Tehran. In April 2020, Gabriel Wortman impersonated a police officer while carrying out the deadliest rampage in this country's history in the province of (*) Nova Scotia. Military-grade assault weapons were banned in May 2020 by Prime Minister Justin Trudeau in, for ten points, what North American country?

ANSWER: **Canada**

<Other Academic - Yoo>

18. This number symphony has been deemed cursed, as many composers have died after the completion of their symphony of this number, such as Antonín Dvořák (**dih-vor-JAHK**), Franz Schubert, and Gustav Mahler. For ten points each,

[H] Name this number, the most famous symphony of which uses text from Friedrich Schiller's "Ode to Joy," and is nicknamed the *Choral Symphony* for its use of voices.

ANSWER: **Ninth** Symphony

[E] The Choral Symphony is by this composer, whose third symphony is known as the Eroica and his sixth is known as the Pastoral. His 5th symphony begins with a short-short-short-long rhythm that depicts fate knocking at the door.

ANSWER: Ludwig van **Beethoven**

[M] Beethoven's 5th symphony is in this key's minor, which has 3 flats in the order B E A, and is the relative minor to E-flat major. This key's major has no sharps or flats.

ANSWER: **C** [accept **C** major or **C** minor]

<Auditory Fine Arts - Leakey>

19. One king of this country won the 1631 Battle of Breitenfeld (BRITE-en-feld) before dying at the Battle of Lutzen. Another king of this country, Charles XII, lost the Battle of Poltava and the Great Northern War to Peter the Great of Russia. One ruler of this country joined with (*) Denmark and Norway in the Kalmar Union. For ten points, the House of Vasa and its monarch Gustavus Adolphus ruled what Scandinavian country with capital at Stockholm?

ANSWER: **Sweden** [or Kingdom of **Sweden** or **Sverige** or Konungariket **Sverige**]

<European History - Havlick>

19. Asia is home to some of the largest river systems in the world. For ten points each:

[M] What river is named after the color of the soil that it drains into a sea of the same name? That river flows through the city of Luoyang.

ANSWER: **Yellow** River [accept **Huang He**]

[H] The Yellow River and Yangtze River are connected by this structure, which was built by the Sui Dynasty and restored by the Ming Dynasty.

ANSWER: The **Grand Canal**

[E] Both the Yellow and Yangtze are in this country, the most populous in the world.

ANSWER: People's Republic of **China** [do not accept or prompt on "Republic of China"]

<World Geography - Havlick>

20. **Mount Springer and Katahdin mark the southern and northern termini of a hiking trail spanning this mountain range. The Catskills and Blue Ridge Mountains are subranges of this larger mountain range. The natural beauty of the region named for this mountain range is threatened by mountaintop removal for (*) coal mining in states like West Virginia.** For ten points, name this largest mountain range east of the Mississippi.

ANSWER: the **Appalachians** [or the **Appalachian Mountains**]

<US Geography - Volney/Gray>

20. For ten points each, answer some questions about the TNM staging system.

[E] The TNM staging system classifies the severity of cases of this disease, types of which include melanoma, carcinoma, and leukemia. This disease is most commonly treated with surgery, radiation, or chemotherapy.

ANSWER: **cancer**

[M] The T in TNM represents the size and extent of these objects, which are formed through neoplasia. These abnormal masses of tissue can be benign, but malignant ones cause cancer.

ANSWER: **tumor**

[H] The N in TNM describes the involvement of these organs. These organs found in the armpits and in the head and neck area serve as reservoirs for white blood cells, and may swell up during infection.

ANSWER: **lymph nodes** [or **lymph glands**; do not accept or prompt on "lymph" alone]

<Biology - Pamurthy>