THE LONG ISLAND QUIZ BOWL ALLIANCE

MSHSAA-Style Sample

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1. This author wrote a post-nuclear story about an automated house which keeps going without its inhabitants. In a novel by this author, The Mechanical Hound chases after the killer of the fireman Captain Beatty. What American author wrote "There Will Come Soft Rains" and *Fahrenheit 451*?
ANSWER: Ray **Bradbury** <Literature>

2. This type of fuel is required to be contained in blue-colored cans for portable use. This was the original fuel used for Coleman lamps, is the fuel used in traditional barn lanterns, and is used as the primary nighttime heating source by the Amish. What fuel makes up most of A and A-1, the simplest jet fuels?
ANSWER: **kerosene** <General Knowledge>

3. One of this book's "imprecatory" sections contains a request to "Pour out Your indignation on them." The author of most of this book, who notes "I walk through the valley of the shadow of death," was David. Which book's twenty-third chapter opens "The Lord is my shepherd, I shall not want?"
ANSWER: Book of **Psalms** <Religion>

4. In this country, Miles Copeland Jr. used his relations with a foreign leader to help plan the CIA's "Project FF." In this country, the Free Officers Movement was launched to depose the opulent King Farouk. Name this country where Gamel Abdel Nasser nationalized the Suez Canal.
ANSWER: **Egypt** <History>

5. The supercritical form of this compound is used as a solvent for decaffeination. A namesake anhydrase interconverts this compound and water into H+ and the bicarbonate ion. Alongside ethanol, this gas is released during fermentation. Name this gas that plants use to produce glucose.
ANSWER: **carbon dioxide** [accept **CO2**] <Science>

6. One player of this instrument led a band that released the album *Moanin'* with their group The Jazz Messengers. At Carnegie Hall, two players of this instrument had a famous "battle." A solo for this instrument on Benny Goodman's "Sing, Sing, Sing" was played by Gene Krupa. What rhythm instrument typically includes toms, cymbals, and a snare?
ANSWER: **drums** [or **drum** set or **drum** kit] <Fine Arts>

7. A woman who lost two gubernatorial elections in this state uses the pen name Selena Montgomery. The youngest current U.S. Senator is from this state, whose other U.S. Senator defeated Kelly Loeffler ["LEF-ler"] in a 2021 runoff. What southern state, where Stacey Abrams twice lost to Brian Kemp, is served by Jon Ossoff and Raphael Warnock?
ANSWER: **Georgia** <Current Events>

8. Convert the following binary number into base-ten: 1101010 [one-one-zero-one-zero-zero-one].
ANSWER: **105** <Computational Math>

9. Double forms of this function are used to establish the Presburger and Peano arithmetics. The Taylor series of this function shows it is equal to "i-sine-of-x plus cosine-of-x," meaning it is equal to its own derivative. Name this inverse of the logarithm which appears as Euler's number raised to a power.
ANSWER: **exp**onential function [or **exponent**s; or **e to the x**] <Science>

10. In response to the My Lai massacre, activist Tony Shafrazi spray-painted the words "KILL LIES ALL" onto this painting. An eye with a lightbulb in place of a pupil functions as the sun in this monochromatic painting. What anti-war painting by Pablo Picasso depicts the aftermath of the bombing of a Spanish town?
ANSWER: ***Guernica*** <Fine Arts>

11. Types of these structures are connected by the Channels of Lambert and the Pores of Kohn. Patients known as "pink puffers" suffer from a disease caused by the enlargement and loss of elasticity of these specific structures, known as emphysema. Gas exchange is facilitated by what smallest air sacs within the lungs?
ANSWER: **alveoli** <Science>

12. Historian Joseph Roe credits this man with developing the first milling machine at his New Haven factory. This man's system of "interchangeable parts" inspired his invention of a machine removing seeds from a crop used for textiles. What American inventor is responsible for creating the first cotton gin?
ANSWER: Eli **Whitney** <History>

13. In this film, characters who use mineral water to depict their murder victims as gay lovers earlier poison another character with drain cleaner, causing one of the title characters to begin wearing a red scrunchie. In what 1988 black comedy does Veronica Sawyer overthrow the title clique, whose three members all share the same name?
ANSWER: ***Heathers*** <Pop Culture>

14. This conflict took a turning point at the Battle of Las Navas de Tolosa when Almohad forces were defeated by Alfonso VIII. This conflict ended after the conquest of the Andalusian emirate of Granada at the hands of Aragon and Castile under Isabella and Ferdinand. Name this Christian campaign to reclaim Spain from Muslims.
ANSWER: **Reconquista** <History>

15. One work by this author sees Stephen Albert killed by a character whose ancestor Ts'ui Pen created the title labyrinth. In addition to the "Garden of Forking Paths," this author wrote about Purifiers searching for books in a location with infinite rooms. What Argentinian author wrote "The Library of Babel"?
ANSWER: Jorge Luis **Borges** <Literature>

16. This creature is the 9th animal in the Chinese zodiac, finishing the Great Race after the ram but ahead of the rooster. A literary character of this species acquires the 72 Earthly Transformations and is able to run at the speed of a meteor. Sun Wukong from Journey to the West is a magical creature of which animal species?
ANSWER: **monkey** [or **hou**zi]
<Mythology>

17. Franklin Delano Roosevelt Lake was formed on this river after the creation of the Grand Coulee dam. This river's tributary, the Willamette River, flows along the western coast of Oregon through Portland. Name this river that the Snake River is a tributary of, the longest river in the Pacific Northwest.
ANSWER: **Columbia** River <Geography>

18. The amount of this quantity applied to a solenoid equals magnetic field times area times current times the number of windings. Gear trains can "multiply" this quantity, which equals rotational inertia times angular acceleration. What is the rotational analogue of force?
ANSWER: **torque** <Science>

19. Hyman Minsky's "financial instability" hypothesis was frequently applied to these things during a "crisis" impacting their subprime type. The terms of these financial agreements may include a "balloon payment" or a fixed interest rate typically lasting between 15 to 30 years. Name these loans which are taken to purchase a house.
ANSWER: **mortgage**s [accept subprime **mortgage** crisis; accept balloon payment **mortgage**s; prompt on loans before it is read] <Social Science>

20. In a novel set in this country, Sergeant Pluck creates an atomic theory of bicycles. The novel *The Third Policeman* is set in this country, where a soliloquy ending with "yes I said yes I will yes" is given by Molly Bloom. The novel *Ulysses* is set in what European country, the birthplace of Flann O'Brien and James Joyce?
ANSWER: **Ireland** [or **Éire**] <Literature>

21. After this man crashed into the barriers at the Azerbaijan Grand Prix, he quietly claimed that he "was stupid," generating a viral clip. This driver scored his latest Grand Slam at the 2022 Australia Grand Prix. What Monegasque Formula 1 Driver represents Scuderia Ferrari?
ANSWER: Charles **Leclerc** <Pop Culture>

22.. This law was applied to a case that led to the creation of "Baby Bells". Although this law was weakened by the 1895 case *United States v. E. C. Knight Co.*, it was used to dissolve Northern Securities and Standard Oil. A senator from Ohio names what 1890 antitrust act?
ANSWER: **Sherman** Antitrust Act of 1890 <History>

1. Answer the following about infidelity in literature:
1. In this Nathaniel Hawthorne novel, Hester Prynne has an affair with Arthur Dimmesdale, causing her to wear the title symbol.
ANSWER: *The* ***Scarlet Letter***
2. In a novel by this author, a character attempts suicide with his lover and wife's sister, Mattie Silver. This author wrote a novel in which a pickle dish represents the relationship of Zeena and Ethan Frome.
ANSWER: Edith **Wharton**
3. This semi-autobiographical novel's protagonist has an affair with Rosemary Hoyt, while his wife has one with Tommy Barban.
ANSWER: ***Tender is the Night***
<Literature>

2. Answer the following about a certain subatomic particle:
1. Types of these subatomic particles found in the valence, or outermost, shell of an atom are involved in the formation of chemical bonds.
ANSWER: **electrons** [accept valence **electrons**]
2. This approach to molecular geometry analyzes lone electron pairs to predict a compound's three-dimensional shape.
ANSWER: **VSEPR** [accept **valence shell electron pair repulsion** theory]
3. This phenomenon is observed when delocalized electrons within certain molecules or ions cannot be described by a single Lewis structure. It is denoted with a double-headed arrow.
ANSWER: **resonance**
<Science>

3. Answer the following about Roman Egypt.
1. Julius Caesar's siege of this city burned part of its great library, which once collected books from every ship docked at its port. This city later became the capital of Roman Egypt.
ANSWER: **Alexandria** [accept Great Library of **Alexandria**]
2. After losing the Battle of Actium, this general fled to Alexandria and committed suicide with his lover. He was a member of the Second Triumvirate, along with Augustus and Marcus Lepidus.
ANSWER: Mark **Antony** [or Marcus **Antonius**]
3. Cleopatra had previously given birth to this only biological son of Julius Caesar, whom Augustus ordered executed in 30 BC.
ANSWER: **Caesarion** [or **Ptolemy XV** Caesar]
<History>

4. Answering the following about the smells of U.S. cities.
1. Driving across Hoan Bridge into this state's city of Milwaukee is said to smell like "fish and ash," likely arising from fertilizer production or wastewater treatment nearby.
ANSWER: **Wisconsin**
2. The famous "aroma of" this city smells like rotten eggs, and is potentially caused by a local paper mill. Seattle's international airport is partly named after this suburb.
ANSWER: **Tacoma** [prompt on Sea-Tac]
3. Baytown, Texas is permeated by industrial smells from this company's second-largest oil refinery in the U.S. One of this company's supertankers spilled 10 million gallons of oil after striking a bligh reef in Prince William Sound.
ANSWER: **Exxon**Mobil
<Geography>

5. Answer the following about Chimamanda Ngozi Adichie.
1. Adichie was born in this African country, whose Igbo people are the subject of novels by Chinua Achebe.
ANSWER: Federal Republic of **Nigeria**
2. In an essay adapted from a TED talk of the same name, Adichie claimed "we should all be" these people in fighting for social equality.
ANSWER: **feminist**s [accept *We Should All Be* ***Feminist****s*]
3. Kaiene attempts to cross enemy lines and retrieve supplies for a Biafran refugee camp at the end of this Adichie novel.
ANSWER: ***Half of a Yellow Sun*** <Literature>

6. Answer the following about card games and probability:
1. If you choose a random card from a standard deck of 52 cards, what is the probability that it's a prime number? Face cards do not count as numbers for this question.
ANSWER: **4/13** [or **4 in 13**]
2. If you choose a random card from a standard deck of 52 cards, what is the probability that it's either a face card or a spade?
ANSWER: **11/26** or [**11 in 26**] (There are 12 face cards and 10 additional spades that are not face cards, so the probability that it's either a face card or a spade is 22/52=11/26.)
3. In Texas Hold'Em, players are dealt hands of two cards each. What is the probability that a player's two cards are the same suit?
ANSWER: **12/51** [or **12 in 51**]
<Computational Math>

7. Answer the following about exclaves, territory controlled by one state but surrounded by others.
1. This country's border with India contained over 200 exclaves, until a 2015 agreement left Dahagram-Angarpota as its sole exclave. This country's capital Dhaka lies within the Ganges Delta.
ANSWER: **Bangladesh**
2. The towns of Baarle-Hertog and Baarle-Nassau form 28 exclaves between these two European nations, the largest of the Low Countries. Antwerp lies south of these two countries' border.
ANSWER: **Belgium** and The **Netherlands** [accept in either order]
3. This Russian exclave, lying between Poland and Lithuania, contains its only Baltic port free of winter ice.
ANSWER: **Kaliningrad** Oblast
<Geography>

8. Answer the following about firsts in the 2024 election:
1. This president became the first person in over a century to win two non-consecutive terms after defeating Kamala Harris.
ANSWER: Donald **Trump**
2. Andy Kim became the first Korean-American elected to the Senate after replacing Bob Menendez's seat in this state.
ANSWER: **New Jersey**
3. This state's representative-elect Sarah McBride became the first transgender member of the House.
ANSWER: **Delaware**
<Current Events>

9. Answer the following about reclaiming the Holy Land:
1. This series of Christian-led conflicts was first fought to reclaim the Holy Land from the Muslims.
ANSWER: **Crusade**s
2. This Muslim ruler would defeat the Kingdom of Jerusalem at the Battle of Hattin and often feuded with Richard the Lionheart.
ANSWER: **Saladin** [or **Salah ad-Din**]
3. Saladin founded this Kurdish dynasty after replacing the Fatimid Caliphate.
ANSWER: **Ayyubid** dynasty
<History>

10. Answer the following about a certain cellular process:
1. This process involves the duplication of its namesake molecule. This process occurs during the S Phase, and takes place semiconservatively, instead of conservatively or dispersively as previously thought.
ANSWER: **DNA replication** [prompt on replication]
2. To split the DNA in preparation for replication, this molecule is used to break the hydrogen bonds that hold DNA together. This enzyme is named for the innate structure of DNA itself.
ANSWER: **helicase** [do not prompt or accept on helix]
3. These segments are used to initiate DNA replication. Okazaki fragments are built off of these segments, which DNA polymerase I repairs to properly fit the nucleotide sequence of the DNA itself.
ANSWER: **RNA primers** [prompt on primer]
<Science>

11. Answer these questions about money transfers:
1. The Pigovian form of this financial levy is imposed by the government to decrease consumption of certain goods and services.
ANSWER: **tax**es
2. Taxes are used to decrease a negative form of this phenomenon which is an indirect cost affecting a third party in a market exchange.
ANSWER: **externalities**
3. This curve displays a bell shape between the tax rate imposed and the amount of tax revenue the government will receive. This curve is named after an economist who worked for the Reagan Administration.
ANSWER: **Laffer** Curve
<Social Science>

12. Answer the following about Calvinism.
1. Calvinism was headed by Huldrych Zwingli and John Calvin, who were from this country's cities of Bern and Geneva.
ANSWER: **Switzerland**
2. One of the reasons for the split of Calvinism from Lutheranism was debate on the real presence of Christ in this ceremony.
ANSWER: **Eucharist** or Holy **Communion**
3. Huldrych Zwingli fell out with Martin Luther at this Protestant debate over the nature of the Eucharist.
ANSWER: **Marburg** Colloquy
<Religion>

13. Answer the following about the social media site Reddit:
1. Reddit users, known as Redditors, receive this type of user score when someone upvotes their posts. This is named after an ancient Indian concept that refers to the consequences of one's actions.
ANSWER: **karma**
2. Sub-communities on Reddit are named by prefixing their titles with this two-character symbol.
ANSWER: **r/** ["r-slash"]
3. Redditors celebrate this day that marks the anniversary of the creation of their Reddit account.
ANSWER: **cake** day
<General Knowledge>

14. Answer the following about Charlemagne.
1. In 768, Charlemagne was crowned as king of these people, who gave their name to the country later ruled by monarchs such as Louis ["LOO-ee"] the Fourteenth.
ANSWER: **Frank**s [accept **France** or **Francia**]
2. Charlemagne's reign ushered in one of these periods, which saw the flourishing of literature and culture. Italy was the center of a later one of these movements during the 15th and 16th centuries.
ANSWER: **Renaissance** [accept Carolingian **Renaissance**, Medieval **Renaissance**, or Italian **Renaissance**]
3. In 800, Charlemagne was appointed Holy Roman Emperor by the third pope with this name. The tenth pope with this name granted indulgences to donors, helping spark the Protestant Reformation.
ANSWER: **Leo** [accept **Leo** III or **Leo** X]
<History>

15. Answer the following about birds in English poetry:
1. This poet wrote about a nightingale "not born for death" in an ode. He also wrote odes about autumn and "a Grecian Urn".
ANSWER: John **Keats**
2. In one poem, this bird's corpse is hung on a rope looped around the title character. What bird is hailed as a "Christian soul" in *The Rime of the Ancient Mariner*?
ANSWER: **albatross**
3. What author contrasts "a full-hearted evensong" with the title bird's "frail, gaunt, and small" demeanor in his poem "The Darkling Thrush?"
ANSWER: Thomas **Hardy**
<Literature>

16. Answer the following about a circle which has its center at (-3, 0) and intersects the x-axis at the origin.
1. What is the other x-intercept of the circle?
ANSWER **(-6, 0)**
2. The circle is reflected across the y-axis, and then translated by 1 unit in the positive y-direction. What are the new coordinates of the center of the circle?
ANSWER: **(3, 1)**
3. The translated circle is now reflected across the line y=x, and then translated by 1 unit in the negative-x direction. What are the new coordinates of the circle's y-intercept?
ANSWER: **(0, 0)**
<Maths>

17. Answer the following about skateboarding:
1. This famous skateboarder, nicknamed “Birdman,” is the namesake of a popular video game series titled “Pro Skater.”
ANSWER: Tony **Hawk**
2. Before skateboarding was added to the Olympics in 2020, the largest skate competition took place at these extreme sports games.
ANSWER: **X** Games
3. In contrast with street skateboarding, this other style involves skaters using emptied swimming pools or other inclines to attempt tricks that achieve significant height off the ground.
ANSWER: **vert** skating [or **transition** skating]
<Pop Culture>

18. Answer the following about an ancient Mesopotamian city.
1. A king of this city, Hammurabi, created a law code advocating for “an eye for an eye”. This city is the namesake of an exile or “captivity” of the Jewish people.
ANSWER: **Babylon** [or **Babylon**ia]
2. This other Babyloanian ruler, of the Neo-Babylonian Empire, constructed the Hanging Gardens and began the Babylonian Captivity.
ANSWER: **Nebuchadnezzar II**
3. Nebuchadnezzar also defeated a rebellion by this Phoenician city, which was once captured by Alexander the Great after he constructed a causeway to its island.
ANSWER: **Tyre**
<History>

19. Answer the following about Star Wars television shows:
1. This 2022 miniseries follows the title character as he attempts to rescue Princess Leia from the grasp of Darth Vader and the Galactic Empire.
ANSWER: Obi-Wan **Kenobi**
2. This first live action Star Wars series follows the title bounty hunter as he protects the young force sensitive Grogu, who is often affectionately called “Baby Yoda”
ANSWER: **The Mandalorian**
3. This character, who first appears in the cartoon Star Wars Rebels and then in the miniseries Ahsoka, is a young con artist from Lothal who is trained by Kanan Jarus.
ANSWER: **Ezra** **Bridger** [accept either underlined name]
<Pop Culture>

20. Answering the following about the conservation of momentum.
1. An object’s momentum, equal to mass times this quantity, remains constant unless outside forces are present. This quantity is the speed and direction of an object’s motion.
ANSWER: **velocity**
2. Conservation of momentum can be used to calculate these events, where one object exerts a force on another, changing each object’s velocity while their total momentum is unchanged. These events are either elastic or inelastic.
ANSWER: **collision**s
3. The ballistic type of device can be used to calculate a projectile’s velocity using the conservation of momentum. The projectile’s momentum is transferred to this device, whose change in mechanical energy is then measured.
ANSWER: **pendulum** [or ballistic **pendulum**]
<Science>

21. Answer the following about the music of Georges Bizet's *Carmen*.
1. The melody of the habanera is based on a descending one of these scales, which has twelve pitches separated by half-steps.
ANSWER: **chromatic**
2. A song titled after this profession also opens with a descending chromatic scale and is sung by Escamillo, a member of this profession who describes how the "crowd cries out" when watching him.
ANSWER: **toreador** [or **bullfighter**]
3. Both the refrain from the "Toreador Song" and this other passage serve as motifs throughout the opera. This motif includes a fortissimo string tremolo and two low notes from the double bass.
ANSWER: "**fate**" motif
<Fine Arts>

22. Answer the following about an assassination in Dallas:
1. This 35th President of the United States was assassinated in Dallas while campaigning for New Frontier policies.
ANSWER: **John F. Kennedy** [accept **JFK**; prompt on **Kennedy**]
2. This Governor of Texas was traveling with Kennedy at the time of the assassination and suffered serious wounds to the chest and arm. He later served in the Nixon Administration as Secretary of the Treasury.
ANSWER: John Bowden **Connally**, Jr.
3. This derogatory term was used to criticize the findings of the Warren Commission, which claimed that a "single bullet," not another gunman, had struck both Kennedy and Connelly.
ANSWER: "**magic-bullet**" theory
<History>