

2021 AQBL February

Packet 4

- 1. The curl of the vector potential is equal to this quantity, which can be measured in oersteds in the CGS system. The divergence of this quantity is always equal to zero, according to a version of Gauss's law. James Clerk Maxwell added a displacement current term to correct an equation that calculates this quantity. This quantity is crossed with velocity and multiplied by charge in the Lorentz force equation, and can be calculated using the (*) Biot-Savart law or Ampere's circuit law, which relates this quantity to the current through a closed loop. For 10 points, name this vector field symbolized with a capital B or H, commonly contrasted with its electric counterpart.**
ANSWER: magnetic field (accept B-field and prompt on B before mention) <DS, Physics>
- 2. In 2001, this country uncovered a Jemaah Islamiyah plot to bomb several embassies in this country. In 1994, the American Michael Fay was caned for committing vandalism in this country, which in 1993 was the subject of an article titled "Disneyland with the Death Penalty." This country was established as a British protectorate by Stamford (*) Raffles, and under the leadership of the People's Action Party and Lee Kuan Yew, this country joined the Malayan Confederation in 1963, before being expelled in 1965. For 10 points, name this city-state in Southeast Asia.**
ANSWER: Republic of Singapore <MB, World History>
- 3. A 2015 cup game between two teams from this country was suspended after the visiting team was pepper-sprayed by a fan at halftime. Two teams from this country played a Copa Libertadores Final in Madrid, and contest the Superclassico. Mauricio Pochettino played for this country's Newell's Old Boys, which was managed by Marcelo (*) Bielsa. This country defeated England in a world cup match after the "Goal of the Century" and the "Hand of God." For 10 points, name this home country of Lionel Messi and Diego Maradona, and where Boca Juniors and River Plate play in Buenos Aires.**
ANSWER: Argentina (or Argentine Republic) <MB, Pop Culture>
- 4. In this novel, one character asks one of the Scherbatskys to leave after he flirts with his wife; that wife nurses his brother Nikolai when he suffers from consumption. After a husband in this novel forgives an affair due to the near-death of his wife, the man in the affair attempts to shoot himself. In this novel, Kitty marries Konstantin (*) Levin and the title character elopes to Italy after her husband, the government official Karenin, refuses to grant her a divorce. Because she thinks that Count Vronsky has been unfaithful, the title character of this novel throws herself in front of a train. For 10 points, name this novel by Leo Tolstoy.**
ANSWER: Anna Karenina <MB, European Literature>
- 5. This man discussed the contrast between caste and varna in *The Religion of India*, and believed that bureaucracy within society would lead to a "polar night of icy darkness." Wealth, prestige, and power make up this thinker's theory of social stratification, and he also classified authority into charismatic, traditional, and legal "ideal (*) types." In his most famous work, this sociologist stated that Calvinism had a large impact on economic growth through the title concepts. For 10 points, name this German sociologist who put forth his "iron cage of rationality" in *The Protestant Ethic and the Spirit of Capitalism*.**
ANSWER: Maximilian Karl Emil Weber (accept Max Weber) <AN, Social Science>

6. **An artist from this city depicted the Guardian of one of its *Scuole* [Scwoah - lay] recovering a portion of the true cross in his *Miracle of the Cross at the Bridge of San Lorenzo*. Though it is named for Dresden, the first reclining nude in western art was *Sleeping Venus* by an artist from this city, Giorgione. Vittore Carpaccio, another artist from this city, depicted its large (*) *campanile*, or bell tower, and several ships in the background of *The Lion of Saint Mark*, a painting for its Doge's Palace. For 10 points, the aptly-named Canaletto made many paintings of what city home to Saint Mark's Basilica? ANSWER: Venice (or Venezia; the first painting mentioned is by Gentile Bellini) <MB, Visual Fine Arts>**
7. **The Kerwin Report investigated four PEAPS in the aftermath of this event. Roger Boisjoly raised safety concerns in the months preceding this event, whose victims were memorialized in a speech claiming that they attempted to "touch the face of God". The Rogers Commission eventually blamed the Morton Thiokol Chemical Corporation for this event due to the failure of an (*) O-ring design. This event resulted in the death of Concord High School teacher Christa McAuliffe and six other crewmates. For 10 points, name this 1986 disaster where seven astronauts were killed after an American space shuttle exploded. ANSWER: Challenger disaster (accept equivalents like "explosion" for disaster) <AK, American History>**
8. **One poem by this author tells the reader "the silent sullen peoples / shall weigh your Gods and you." That poem by this author asks to "veil the threat of terror / and check the show of pride" and to "bind your sons to exile / to serve your captives' need" after commanding "send forth the best ye breed." In another poem by this author, a character is told to "wait and not be tired by waiting" and "keep your (*) head when all about you / are losing theirs and blaming on you;" that poem ends with the exclamation "you'll be a Man, my son!" For 10 points, name this British poet of "The White Man's Burden" and "If," who wrote about Mowgli in *The Jungle Book*. ANSWER: Rudyard Kipling <MB, British Literature>**
9. **During their tenure at one position, this politician had a public bicycle hire scheme sponsored by Santander named after him. A senior advisor to this man's relationship with Sajid Javid led the latter to resign in 2020; that man is Dominic Cummings. During the 1990's, this leader served as a Belgian correspondent for *The Daily Telegraph*. After facing foes such as Michael (*) Gove in a bid for party leadership, this figure succeeded Theresa May to further his Brexit-oriented agenda. For 10 points, name this former mayor of London and current Prime Minister of the United Kingdom. ANSWER: Boris Johnson <AK, Current Events>**
10. **An S-adenosyl methionine cofactor and PNMT are used to synthesize this compound from a similar compound with a hydrogen atom instead of a methyl group. The synthesis of this compound begins with the oxidation of tyrosine to L-DOPA. Chromaffin cells produce most of this compound in the body. In order to treat arrhythmia, beta blockers block the receptor site for this hormone. The (*) EpiPen treats anaphylaxis by injecting this hormone, and this hormone's namesake glands are located above the kidneys. For 10 points, name this hormone that is secreted during the fight-or-flight response, which is produced by the adrenal glands. ANSWER: adrenaline (accept epinephrine; do not accept or prompt on "noradrenaline" or "norepinephrine") <CS, Biology>**

11. **A composer from this country was criticized as endorsing terrorism in an opera that includes the “Chorus of Exiled Jews” and the “Chorus of Exiled Palestinians.” In another opera from this country, one character sings “News Has a Kind of Mystery” after descending from the Spirit of ‘76. After Pat interrupts a performance of *The Red Detachment of* (*) *Women* in that opera from this country, another character sings “I am the wife of Mao tse-tung.” Another composer from this country used “knee plays” to connect the acts of his opera *Einstein on the Beach*. For 10 points, name this home country of Philip Glass and the composer of *Nixon in China*, John Coolidge Adams.**
ANSWER: United States of America (or U.S.A.) <MB, Other Fine Arts>
12. **The Japanese probe *Chikyū Hakken* aims to collect samples from this region. Plumes named for this region are a proposed mechanism of convection driven primarily by this region’s asthenosphere. This region is mainly composed of ultramafic rocks such as peridotite, which is dominated by the minerals olivine and pyroxene. This region lies directly below the (*) Mohorovicic [moh-hoh-ROH-veech-itch] discontinuity, and the lowermost portion of this region is the D double prime layer. For 10 points, identify this layer of the earth located between the core and crust.**
ANSWER: mantle (accept more specific answers, such as upper or lower mantle) <DS, Other Science>
13. **This work opens with a crescendoing tam-tam roll, and its first movement also contains a theme with a euphonium and trumpet fanfare, and is an ostinato in 5/4 [five-four] time. In the seventh movement of this piece, a fadeout is created by closing the door on two offstage women’s (*) choruses. Another movement of this piece was used as the base for a hymn tune which was later adapted to the poem “I Vow to Thee, My Country.” This work includes movements subtitled “the Winged Messenger” and “the Bringer of War.” For 10 points, name this Gustav Holst suite whose movements include “Mars” and “Jupiter.”**
ANSWER: *The Planets* <AN, Auditory Fine Arts>
14. **In a speech about creating a “national guard,” this person coined the phrase “liberté, égalité, fraternité.” Later, his journal *The Defender of the Constitution* attacked Jacques Brissot’s support for War with Austria. The Directory was established after the overthrow of this leader and founder of the Cult of the Supreme Being, who was executed during the (*) Thermidorian Reaction. This leader cried “the blood of Danton chokes him!” at that man’s execution, and signed over 500 arrests, many of whose targets were later guillotined. For 10 points, name this leader of the Committee of Public Safety during the Reign of Terror of the French Revolution.**
ANSWER: Maximilien Robespierre <MB, European History>
15. **One character in this novel has his money stolen by a man who promises to buy him a bus ticket, and is later convinced to walk to Alexandria in support of a bus boycott. Later in this novel, a new church is built by a benefactor who receives a wreath from that character’s village. At the beginning of this novel, the protagonist receives a letter saying his sister Gertrude is sick from the priest (*) Theophilus Msimangu. This novel follows the Reverend Stephen Kumalo as he searches for his son Absalom, who is arrested and put to death for the murder of Arthur Jarvis. For 10 points, name this Alan Paton novel about apartheid South Africa.**
ANSWER: *Cry, the Beloved Country* <MB, World Literature>

16. **In the mythology of this country, Tethra rules the realm of Mag Mell after being killed in battle. In another story, a man finds three hundred years have passed after using a water-crossing horse to reach this country from its underworld, Tir na nOg [teer nah nog]. In another myth from this country, a man is killed in a fight with Lugaid after breaking a taboo on eating (*) dog meat; that man had previously defended an attempt to steal a prize bull. A hero from this country sucks his thumb for wisdom after he burns it while cooking the salmon of knowledge. Cu Chulainn and Finn McCool are from, for 10 points, what country whose mythology includes the Ulster Cycle?**

ANSWER: Ireland (or Eire) <MB, Mythology>

17. **Members of this religious group believe they can become gods, achieving a level of salvation called exaltation, though most will enter one of its Three Kingdoms of Heaven. Members of this religion traditionally form a prayer circle around an altar in its endowment ceremony, during which individuals receive a temple (*) garment meant to be worn at all times. This religion's members are encouraged to undertake two years of missionary work. For 10 points, name this Christian sect whose leader Joseph Smith discovered a set of golden plates in New York before Brigham Young led his followers to Utah.**

ANSWER: Mormonism (or Church of Jesus Christ of Latter-Day Saints; prompt on Christianity) <MB, Religion>

18. **In 2016, a country planned on building the first underwater museum for sunken ruins in this city. An institution in this city was damaged in sieges led by Aurelian and Diocletian, and its Serapeum was destroyed by Theodosius. After the Battle of Actium, Mark Antony and Cleopatra committed suicide in this city, where (*) Euclid and Eratosthenes performed research during the Hellenistic Period. This city's Pharos, built by Ptolemy II, was one of these tallest man-made structures in the world. For 10 points, name this Egyptian city founded by a Macedon King, the site of a notable library and lighthouse.**

ANSWER: Alexandria <MB, Other History>

19. **This work's protagonist is frustrated after she is said to be "the king's mule," and has her first kiss with Johnny Taylor at age sixteen. This work is framed as a story being told to Pheoby by a woman whose mother Leafy was raped by a schoolteacher. In this novel, a husband is bitten by a rabid dog after he and his wife move to the (*) Everglades. The protagonist of this novel is pressured into marrying Logan Killicks by Nanny before running off with future mayor Jodie Starks and eventually marries Tea Cake before shooting him. For 10 points, name this novel about Janie Crawford by Zora Neale Hurston.**

ANSWER: *Their Eyes Were Watching God* <AN, American Literature>

20. **The muon-catalyzed form of this process can be carried out at temperatures below 25 degrees Celsius, and a form of this process was claimed to have been carried out through the electrolysis of heavy water with a palladium electrode. The stellarator and the z-pinch were early proposals for devices that could sustain this process. IEC devices use electric fields to carry out this process, as opposed to (*) tokamaks, which use magnetic fields. Main sequence stars use this process to transform hydrogen into helium in the CNO cycle. For 10 points, name this process that combines two nuclei to create different nuclei.**

ANSWER: nuclear fusion <CS, Chemistry>

Tiebreaker/Extra Question

A territory with this name will join the Schengen Area despite its country leaving the EU. A proposed underwater tunnel across a body of water with this name will connect an overseas territory with this name, which is home to a population of Barbary macaques, to the city of Tangiers. A limestone (*) “Rock” with this name contains a massive series of tunnels dug by the British Army. The Pillars of Hercules bound a body of water with this name that separates Spain and Morocco. For 10 points, give the name of the strait that connects the Atlantic and the Mediterranean.

ANSWER: **Gibraltar** (accept Strait of **Gibraltar** or Rock of **Gibraltar**) <WZ, Tiebreakers>