**GSAC XXIII**Head Edited by Will Overman, written by members of Maggie Walker Quizbowl

**Packet 5**

1. **An archipelago in this body of water includes the uninhabited Morskoy and Rybachy Islands. This body was once part of the Tethys Ocean, and its southern border regions contains the Alborz Mountains. The Amu Dayra once flowed into this body through the (\*)** Uzboy Distributary, the drying of which ended the Khwarazmian culture. This body has no avenues of outflow besides evaporation, although its inflows include the Ural and Volga Rivers. The city of Baku lies on the coast of this body of water. For 10 points, name this body of water, the world’s largest lake.

ANSWER: **Caspian** Sea[accept **Kaspiyskoye More**, **Kaspiy Tenyizi**, **Hazar Denizi**]

2. **Before the start of this battle, the attacking general promised his superiors three Allied soldiers dead for each one of his. During this battle, German forces under Erich von Falkenhayn hoped to crush the opposing forces in a “meat-grinder” effect inside an old Roman fort. However, (\*)** Philippe Pétain managed to secure a supply line for his forces during this battle known as *La Voie Sacreé,* or the Sacred Way. For 10 points, name this 1916 battle during World War I that saw nearly one million men perish in an offensive near the Meuse River in France.

ANSWER: Battle of **Verdun**

3. **Luminosity is proportional to this quantity raised to about the 7/2 power. This quantity is multiplied by 2 big G over c squared to calculate the Schwarzschild radius. Moment of inertia is defined as an integral over differentials of this quantity, and is equal to this quantity multiplied by (\*)** radius squared for a point. This quantity is multiplied by velocity to give an object’s momentum. For 10 points, name this quantity that is multiplied by little g to give weight on earth and is measured in kilograms.

ANSWER: **mass**

4. **The third movement of this work sees an English horn and offstage oboe depicting a “ranz des vaches” between two shepherds. Parts of this symphony were composed under the influence of opium, including a pizzicato section that depicts a (\*)** rolling head after an execution. That section is in the fourth movement of this work, “March to the Scaffold”, which is followed by a movement that uses the *dies irae* motif to depict a witches sabbath. For 10 points, name this symphony by Hector Berlioz.

ANSWER: ***Symphonie fantastique***

**5. After the conclusion of the Bandung conference in Indonesia, this man signed a treaty of friendship with India. In 1952, Muhammad Naguib and this man lead a military coup against King Farouk.** **Although refusing to pledge his allegiance to either side in the Cold War, this man later asked the Soviet Union to help fund his construction of the (\*)** Aswan Dam. Later, he united his country with Syria to form the United Arab Republic. For 10 points, name this founder of the Non-Aligned Movement, the second president of Egypt, who nationalized the Suez Canal in 1956.

ANSWER: Gamal Abdel **Nasser** Hussein

6. **One retrospective exhibit of this artist shows him playing chess with nude model Eve Babitz. Another of his works involves a glass vial with 50 cc of air. His final exhibition depicted a nude woman holding a gas lamp as she lays on her back, and can only be seen through two (\*)** peep holes. Other pieces by this artist include a parody of a famous portrait with the phrase “she has hot pants” coded into it, an upside-down bicycle wheel set upon a stool, and an upside-down urinal signed R. Mutt. For 10 points, name this man whose “readymades” include *L.H.O.O.Q* and *Fountain*.

ANSWER: Marcel **Duchamp**

7. **In a film by this director, a character tells a fake story about walking into a bathroom with marijuana on him and seeing four cops. The main characters in one of his films are all named after colors and are betrayed by Mr. Orange. In another of his films, a (\*)** boxer named Bruce goes back to his apartment to find his father’s watch. His most recent film, *The Hateful Eight*,is going to be premiered in 70 millimeter film. He plays the role of Jimmie in his 1994 film starring Samuel L. Jackson and John Travolta. For 10 points, name this American director of *Reservoir Dogs* and *Pulp Fiction*.

ANSWER: Quentin **Tarantino**

8. **To preserve valuable information, this character has skeleton dimensions tattooed on his right arm. This character sentimentally grasps multiple strangers’ hands while squeezing spermaceti. He is given the three-hundredth lay and is concerned to see Elijah following him. After asking (\*)** Mr. Stubb about Starbuck’s driving, this character resolves to write his own will. This character feels a Siamese connection while tied to his pagan friend, Queequeg. For 10 points, name this narrator who journeys on the Pequod to experience whaling in Melville’s Moby Dick.

ANSWER: **Ishmael**

9. **This god threatens to send the ferryman Harbard to Hel after he insinuates that his wife has a lover. This god broke off Aurvandil’s toe, making it into a star. While feasting in Valhalla, Hrungnir drunkenly challenged this god to a fight. This father of (\*)** Magni rides a chariot pulled by goats and resides in Bilskirnir. This god dresses up in Freya’s clothes in order to retrieve his hammer from Thrym. For 10 points, name this wielder of Mjolnir and Norse thunder god.

ANSWER: **Thor**

10. **This value is the lower bound on the number of copies in the Bounded Knapsack Problem. This value is represented by K in Excess-K, and the first step of Dijkstra’s algorithm is to set the distance of every node to either infinity or this value. It is equivalent to (\*)** false in C++. This value is typically the first index of an array, so many programming languages are said to start counting from this number. Exceptions can occur when dividing by this number. For 10 points, name this number that’s used in the binary system along with one.

ANSWER: **zero**

11. **One poem in this collection states “Our two hearts will be two immense torches.” Another poem in it opens “Nature is a temple in which living pillars / Sometimes give voice to confused words.” A sonnet titled “Correspondences” in this collection provided inspiration for the Symbolist art movement. The poem (\*)** “Au Lecteur” opens this collection by claiming there is nothing more wicked than boredom and that the reader is a hypocrite. It contains sections about wine and death. For 10 points, name this poetry collection containing the section “Spleen and Ideal” by Charles Baudelaire.

ANSWER: *Les* ***Fleurs du Mal***[or “*The* ***Flowers of Evil***”]

12. **A deficiency in the enzyme alpha-NAGA causes a malfunction of this organelle called Schindler disease. Other problems with this organelle include Fabry’s disease and Gaucher’s disease.  When molecules intended for this organelle are improperly tagged with mannose-6-phosphate they don’t actually reach this organelle, which leads to (\*)** I-cell disease. Malfunctions of this organelle itself can lead to Tay-Sachs disease, and it must maintain an acidic pH in order to function. For 10 points, name this organelle that digests macromolecules and cellular waste.

ANSWER: **lysosome**

13. **A person’s first observance of this ritual can include ceremonies involving adorned loaves of bread, and in the Syriac tradition it’s known as Qurbana. In another sect, this ritual can be preceded with an anamnensis and epiclesis, together making up the (\*)** anaphora prayer. A monstrance is utilized to display the items used in it, and Catholic children first receive this ritual after partaking in the Reconciliation sacrament. The words “this is my body” and “this is my blood” are spoken during it. For 10 points, identify this ritual in which Christians re-enact the Last Supper by consuming bread and wine.

ANSWER: Holy **Communion** [accept **Eucharist**]

14. **In this opera, a maid named Annina accidentally reveals that the main character has gone to Paris to sell all of her belongings. In the second act of this opera, one character wins money from gambling with Baron Douphol and proceeds to throw it at the title character’s feet. After singing the (\*)** drinking aria *Libiamo ne’lieti calici* with the son of Giorgio Germont, the title figure of this opera rejects Alfredo in the aria *Sempre libera.* For 10 points, name this Giuseppe Verdi opera about the title “fallen woman” and courtesan Violetta Valéry, who dies of tuberculosis.

ANSWER: ***La traviata*** [prompt on ***The Fallen Woman*** until mentioned]

15. **The “10,000 Islamic rabble” killed a Japanese diplomat during this event, which the Seymour Expedition was sent to suppress. In one battle during this conflict, Russian forces bombarded the city of Peking, while American forces stormed the castle. The (\*)** Eight-Nation Alliance was created in response to this rebellion. An ultimatum was sent to Empress Cixi to call off rebel forces in this rebellion, but she instead declared war on the Alliance. For 10 points, name this anti-imperialist uprising in China, led by the Righteous and Harmonious Fists Society.

ANSWER: **Boxer** Rebellion [accept “**Boxer** Uprising” or “**Yihetuan** Movement”]

16. **The stereoregularity of the production of these substances by metallocene catalysts is explained by the Cossee-Arlman mechanism. These substances can be produced from alkenes using an organometallic titanium-aluminum catalyst named for Ziegler and Natta. The degree of formation for these substances is given by (\*)** Carother’s equation. A thermoplastic example of these substances is Teflon. They can be produced through step-growth and chain-growth processes. For 10 points, name these compounds composed of many repeating subunits.

ANSWER: **polymers**

17. **In *The Time Machine*, the time traveler first finds Weena undergoing this process. In a poem by Stevie Smith, the speaker declares that she is “not waving but” performing this title action. This action occurs to Maggie Tulliver in the (\*)** *Mill on the Floss*. Rosanna Spearman performs this action after incriminating herself in *The Moonstone*. In the last line of “The Mermaid” by William Butler Yeats, the speaker declares that even lovers perform this action.  For 10 points name this action which is the cause of death of Ophelia in Hamlet.

ANSWER: **drowning** [accept obvious equivalents, prompt on “dying” and stuff like that]

18. **One attack during this battle is debated to have taken place either on Calhoun or Reno Hill. Before its start, the leading defender general refused to accept a battery of artillery and two Gatling guns into his regiment. A commander claimed to have experienced a revelation before this battle, saying the (\*)** “Great Spirit has given our enemy to us”. Native accounts of this battle state that the enemy had not been encircled, but were routed after a cavalry charge lead by Crazy Horse. For 10 points, name this 1876 battle that saw George Custer’s last stand during the Great Sioux War.

ANSWER: Battle of the **Little Bighorn** [accept “Battle of **Greasy Grass**”]

19. **At the end of a work named for one of these objects, the protagonist watches ants crawl over his boot. The protagonist of a poem titled for one of these objects falls asleep in a garden after losing one of them. “The Chambered Nautilus” opens by saying that the ship is made of these objects. A character named for one of these objects watches a (\*)** meteor shower on a scaffolding with her mother. Kino returns one of these objects to the sea at the end of a Steinbeck novella named for one. For 10 points, name these objects for which Hester Prynne’s daughter is named in *The Scarlet Letter*.

ANSWER: **pearl**s

20. **One thinker from this country used the analogy of rotting apples to reject beliefs. Another man from this nation wrote a work in which Usbek and Rica observe bizarre Western traditions; that work is (\*)** *Persian Letters*. That man also posited the separation of powers in government in his *The Spirit of the Laws*. One thinker from this country developed the theory of mind-body dualism in his *Meditations* and famously asserted “I think, therefore I am.” For 10 points, name this modern-day country, the birthplace of Baron de Montesquieu and René Descartes.

ANSWER: **France** [accept **French Republic**]

TB. **The title character of this play smacks his wife and calls her a devil after she expresses excitement about returning home. In this play, Gratiano says that Brabantio died of grief due to his daughter’s marriage. A prostitute, (\*)** Bianca, is angered when Cassio makes her copy the embroidery of another woman’s handkerchief. In the first act of this play, Iago convinces Roderigo that he should save money instead of killing himself. For 10 points, name this Shakespeare play where Desdemona is murdered after being accused of cheating on the title “Moor of Venice.”

ANSWER: ***Othello***

1. The Ditadura Nacional ruled this nation after the election of Óscar Carmona in 1928. For 10 points each:

[10] Name this nation, which abolished its monarchy in 1910 during the reign of Emmanuel II of the House of Braganza. This nation’s colonial possessions included Mozambique and Brazil.

ANSWER: **Portugal** [or **Portuguese Republic**]

[10] After the Ditadura Nacional ran its course, this man instituted a fascist government called the Estado Novo. He served as dictator of that regime.

ANSWER: António de Oliveira **Salazar**

[10] This military coup overthrew the Estado Novo. It’s named for the flowers placed in the muzzles of soldiers’ rifles to celebrate the bloodless nature of the event.

ANSWER: **Carnation** Revolution

2. Ermes Marana is the antagonist of this novel in which you fall in love with Ludmilla. For 10 points each:

[10] Name this novel in which the Reader serves as the protagonist of the odd chapters, while the even chapters are all the first chapter of a different novel.

ANSWER: ***If on a winter’s night a traveler***

[10] This Italian author wrote *If on a winter’s night a traveler*. His other works include *Invisible Cities* and *The Baron in the Trees*.

ANSWER: Italo **Calvino**

[10] Italo Calvino’s novel *Invisible Cities* includes conversations between Marco Polo and this ruler, whose city of Xanadu is described in a Samuel Taylor Coleridge poem.

ANSWER: **Kublai Khan**

3. The paintings *Fight with Cudgels* and *Witches’ Sabbath* are included in this series. For 10 points each:

[10] Name this series of fourteen paintings that include very dark scenes, like *Saturn Devouring His Son*.

ANSWER: ***Black Paintings*** [or *Las* ***Pinturas Negras***]

[10] This Spaniard painted the *Black Paintings* in the latter part of his life. He is perhaps best known for his depiction of a man facing a firing squad in *The Third of May, 1808*.

ANSWER: Francisco **Goya**

[10] This other artist exhibited his own *Black Paintings* at the MoMA in 1959. He made a series of works depicting every chapter of Moby Dick and is known for saying “what you see is what you see.”

ANSWER: Frank **Stella**

4. This sculptor was commissioned to make a “Temple of Meditation” which was never built. For 10 points each:

[10] Name this Romanian sculptor who eliminated beaks and feathers in his *Bird in Space*.

ANSWER: Constantin **Brancusi**

[10] This Brancusi sculpture resides at Targu Jiu along with his *Table of Silence* and *Gate of the Kiss*. It’s nearly 30 meters tall and looks like it’s made out of beads.

ANSWER: ***Endless Column***

[10] Three of these animals are seen cuddling in another of Brancusi’s sculptures.

ANSWER: **Penguins** [prompt on “birds”]

5. This quantity comes in kinematic and dynamic forms and is constant for Newtonian fluids. For 10 points each:

[10] Name this quantity that measures a fluid’s resistance to flow.

ANSWER: **viscosity**

[10] Prandtl introduced the idea of this region in order to approximate flow at the edges of fluids. Viscous effects are assumed to only be significant within this region.

ANSWER: **boundary layer**

[10] The equations governing the boundary layer can be determined by using order of magnitude analysis on this set of partial differential equations. They’re the subject of one of the Millennium Prize Problems.

ANSWER: **Navier-Stokes** equations

6. A muted solo trumpet and french horns play a D-flat pentatonic theme in a movement of this work titled “From dawn to noon on [the title entity]”. For 10 points each:

[10] Name this orchestral composition of “three symphonic sketches” that had an illustration of *The Great Wave off Kanagawa* on the cover of its original score.

ANSWER: ***La mer*** [accept ***The sea***]

[10] This other piece by the composer of *La mer* was inspired by a Stephane Mallarmé poem and begins with a flute solo that depicts the title mythological creature in the forest.

ANSWER: ***Prelude to the Afternoon of a Faun*** [accept ***Prélude à l'après-midi d'un faune***]

[10] *La mer* and *Prelude to the Afternoon of a Faun* were written by this French composer known for his impressionistic style. He also composed *Clair de Lune*.

ANSWER: Claude **Debussy**

7. Name some things about supermarkets in literature. For 10 points each:

[10] This poet wrote about seeing Garcia Lorca and Walt Whitman in “A Supermarket in California.” He also wrote the poem “Howl.”

ANSWER: Allen **Ginsberg**

[10] This American author wrote about a supermarket in his short story “A&P.” He also wrote a series of novels about Rabbit Angstrom.

ANSWER: John **Updike**

[10] In this Kenzaburo Oe novel, Takashi leads an uprising against a Korean supermarket owner nicknamed the “Emperor.”

ANSWER: *The* ***Silent Cry***

8. This politician’s most critically acclaimed works include *The Naval War of 1812*. For 10 points each:

[10] Name this Assistant Secretary to the Navy who left his post in order to fight in the Spanish-American War. He was also Vice-President under McKinley.

ANSWER: **T**heodore “Teddy” **Roosevelt** [prompt on “Roosevelt”]

[10] Theodore Roosevelt formed this volunteer Army Corp, whose most distinguished feat was their charge up Kettle Hill during the Battle of San Juan Hill.

ANSWER: **Rough Riders**

[10] The Rough Riders also took part in a siege of this Cuban city. This city had served a naval base for Spanish cruisers in the region, and military forces in this city surrendered to General Shafter in July of 1898.

ANSWER: **Santiago** de Cuba

9. Alan Krueger devised the Great Gatsby curve in 2012, which plots the intergenerational elasticity of social mobility against this quantity. For 10 points each:

[10] Name this concept, at its highest level in America since the Great Depression, defined as the gap between the richest and poorest people.

ANSWER: **income inequality**[accept **wealth inequality**]

[10] One measure of wealth inequality is this Italian index, which regards 0 as a perfectly equal society and 1 as a monopoly on wealth.

ANSWER: **Gini** coefficient [or ratio; or index]

[10] Dissatisfied low-wage workers have gone on strike with the slogan “Fight for [this amount]. Seattle and San Francisco have raised their minimum wage to this amount.

ANSWER: $**15**.00

10. Skirnir gives Gerd these objects, which Bragi’s wife guards. For 10 points each:

[10] Name these objects which Idun supplies to the gods to keep them from aging.

ANSWER: **golden apples** [prompt on “apples”]

[10] This trickster god gives the golden apples of Idun to Thiazi and insults the aged Freya after she lends him her falcon skin.

ANSWER: **Loki**

[10] The golden hair of this wife of Thor is at one point also stolen by Loki.

ANSWER: **Sif**

11. Demonstrate your knowledge of everyone’s favorite childhood disease, strep throat. For 10 points each:

[10] If you had strep throat a lot, your doctor probably recommended the removal of these collections of lymphoid tissue found in the throat.

ANSWER: **tonsil**s

[10] The scientific name for strep throat is Streptococcal pharyngitis, where the “coccal” part of that name means that strep throat is often caused by bacteria with this shape.

ANSWER: **spherical** [accept “**round**” and other clear equivalents, do NOT accept “rod”]

[10] The doctor probably had a nurse stick a swab down your throat as part of this test for strep throat. This test is a quick way to determine the presence of group A streptococci.

ANSWER: **Rapid** strep test [or **Rapid** antigen detection test; also accept “**RST**” or “**RADT**”]

12. The first major production center of this mineral in South Africa was at Kimberley’s Big Hole. For 10 points each:

[10] Name this minable commodity that experienced a surge of demand in the 1930s as a result of a De Beers campaign.

ANSWER: **diamond**s

[10] This British businessman made his fortune buying individual mining rights. He also founded a namesake southern African British colony, which included nations such as Zimbabwe.

ANSWER: Cecil **Rhodes**

[10] *General description acceptable.* The caricature “*The Rhodes Colossus*” depicted Rhodes’ desire to build this structure, which could not be completed due to the existence of German East Africa.

ANSWER: **Cape to Cairo Railway** [accept “the **Red Line**”; accept equivalents like “a railroad from **Egypt** to **South Africa**”]

13. This 2014 album has 5 singles that have topped the Billboard Hot 100 chart. For 10 points each:

[10] Name this album that Imogen Heap claims a writing credit on for the song “Clean”.

ANSWER: ***1989***

[10] This singer behind *1989* can be seen with Calvin Harris when she’s not writing about her exes.

ANSWER: Taylor **Swift**

[10] The music video for this song features a lot of Taylor Swift’s celebrity friends. It’s allegedly about Katy Perry.

ANSWER: “**Bad Blood**”

14. One character in this play says he would “love to help humanity on a Warner Brothers salary” while another plays “cops and robbers” with a kid named Bert. For 10 points each:

[10] Name this play in which Joe Keller commits suicide after his friends and family learn he was guilty of shipping faulty airplane parts during WWII.

ANSWER: ***All My Sons***

[10] Abigail Williams accuses several people of witchcraft during the Salem Witch Trials in this allegorical play for the Red Scare by the same playwright of *All My Sons*.

ANSWER: *The* ***Crucible***

[10] *The Crucible* and *All My Sons* were both written by this American playwright who also wrote about Willy Loman’s final days in *Death of a Salesman*.

ANSWER: Arthur **Miller**

15. Merchant men are cat-like and rat-like at this location. For 10 points each:

[10] Name this poem where the title creatures entreat Laura and Lizzie to “Come buy, come buy.”

ANSWER: “**Goblin Market**”

[10] This author of “Goblin Market” also wrote the carol "In the Bleak Midwinter."

ANSWER: Christina **Rossetti**

[10] Christina Rossetti’s brother painted *Beata Beatrix* in homage to this author, with whom he shares his first name, who included Beatrice as a guide in his *Paradiso*.

ANSWER: **Dante** Alighieri [or Dante **Alighieri**]

16. The boundaries on these entities are called coexistence curves and these constructs show a substance’s triple and critical points. For 10 points each:

[10] Name these structures that show the pressures and temperatures that a substance exists in during solid, liquid, and gas states.

ANSWER: **phase diagram**s

[10] This relation gives the derivative of vapor pressure with respect to temperature and gives the slopes of the coexistence curves on a phase diagram.

ANSWER: **Clausius-Clapeyron** relation

[10] The Clausius-Clapeyron equation can be derived from an equation named after Duhem and this man and his namesake phase rule calculates degrees of freedom.

ANSWER: Josiah Willard **Gibbs**

17. The Three Jewels of this religion includes its founder, his teachings, and the community of enlightened. For 10 points each:

[10] Adherents of this religion follow the Eightfold Path to escape the samsara cycle of rebirth and suffering by reaching nirvana.

ANSWER: **Buddhism**

[10] This branch of Buddhism accepts the Pali Canon, and the Abhidhamma Pitaka differentiates it from other schools of thought.

ANSWER: **Theravada**

[10] Buddhists practice this action, which encourages mindfulness and concentration in the pursuit of nirvana. This action is increasingly practiced by non-Buddhists in west seeking relaxation.

ANSWER: **Meditation** [accept word forms]

18. It was founded as a resistance movement to the US’ invasion of Iraq in 2003, but has since moved its capital to Ar-Raqqah in Syria. For 10 points each:

[10] Name this terrorist organization headed by Abu Bakr al-Baghdadi. It captured Mosul, the second largest city in Iraq, in 2014 after the Iraqi army defected from the city.

ANSWER: **I**slamic **S**tate of Iraq and the Levant [accept **Daesh**, **ISIS**, or **ISIL**]

[10] In June 2015, ISIL bombed one of these structures in Kuwait City, killing 27. Another one of these structures, belonging to a sect of Islam in Pakistan, was bombed in October, killing ten.

ANSWER: Shi’a **mosques**

[10] In November 2015, ISIL launched attacks on Paris, Baghdad, and this city. ISIL operatives set off suicide vests in a crowded market in this city, killing 43 people.

ANSWER: **Beirut**

19. Hamiltonian paths visit each vertex on one of these mathematical objects exactly once. For 10 points each:

[10] Name these mathematical objects that consist of edges and vertices. Their study was introduced by Euler’s solution to the Seven Bridges of Konigsberg problem.

ANSWER: **graph**s

[10] Edges of graphs that can be embedded on one of these flat 2D objects intersect only at vertices. Cartesian coordinates are used on the “x-y” version of this object.

ANSWER: **plane**s

[10] Kuratowski’s theorem claims that a graph is planar if and only if it does not contain a subgraph homeomorphic to the complete bipartite graph of six vertices or the complete graph of this many vertices.
ANSWER: **five**

20. This country’s 1963 White Revolution sought to westernize the nation, as well as to grant legitimacy to the ruling dynasty. For 10 points each:

[10] Name this Middle Eastern country, whose 1979 revolution sought to overthrow the Pahlavi Dynasty.

ANSWER: Islamic Republic of **Iran**

[10] Mohammad Reza Pahlavi held this title before being overthrown by Ayatollah Khomeini during the Islamic Revolution. Its literal translation means “king”.

ANSWER: **Shah** of Iran

[10] This CIA-backed operation put the Pahlavi Dynasty in power in 1953. Mohammad Mosaddegh was targeted by this operation after he nationalized Iran’s oil industry.

ANSWER: Operation **Ajax** [accept “**TPAJAX** Project”, “Operation **Boot**” or “**28 Mordad Coup**”]

Extra. The most common of these stars are still fusing hydrogen into helium surrounding a degenerate helium core, for 10 points each:

[10] Name these stars that have exhausted the supply of hydrogen in their core. They evolve from main-sequence stars that have 0.3 to 8 solar masses.

ANSWER: **red giant**s

[10] This diagram shows stars on a scatter graph with luminosity or absolute magnitude on the vertical axis and temperature or color on the horizontal axis.

ANSWER: **H-R** diagram [or **Hertzsprung-Russell** diagram]

[10] This cluster of main-sequence stars on the H-R diagram contains stars that are more luminous than other stars of their age, most likely because of mass transfer from a companion star.

ANSWER: **blue straggler**s