2016 OAC Regionals - Round 2

Questions written by Ike Jose and Steven Wellstead

Category Round

American Literature: Answer these questions about works of American literature featuring unreliable narrators.

<u>Team A</u>: This unreliable narrator, who has a younger sister named Phoebe, is kicked out of Pencey Prep and spends a couple of days wandering around New York City before suffering a mental breakdown in a 1951 novel.

ANSWER: Holden Caulfield [accept either]

<u>Team B</u>: Billy Bibbit commits suicide by slitting his own throat in this 1962 novel in which the unreliable narrator, Chief Bromden, kills Randle McMurphy by smothering him with a pillow.

ANSWER: One Flew Over the Cuckoo's Nest

<u>Tossup</u>: One of this author's novels ends with its unreliable narrator dying of a coronary thrombosis after the title character gives birth to a child on Christmas Day in Alaska. One of this author's novels features the assassin Jakob Gradus and a man who believes himself to be the exiled king of Zembla. That novel by this writer features a 999 line poem written by John Shade. In another of his novels, the scholar Humbert Humbert describes his affection for "nymphets," including the title pre-teen girl. Name this Russian-American author of *Pale Fire* and *Lolita*.

ANSWER: Vladimir Vladimirovich Nabokov (nah-BAW-kuff) [or Vladimir Sirin]

Mathematics: Pencil and paper ready. Consider two six sided dice. You *must* give your answers in simplest fractional form. In particular, do *not* use decimals. You will have 30 seconds for the team questions.

<u>Team B</u>: Give the probability of rolling the two dice such that their sums are 8.

ANSWER: <u>5/36</u>

Team A: Give the probability of rolling the two dice such that their sums are 5.

ANSWER: 1/9

<u>Tossup</u>: When rolling two six-sided dice, this quantity is 5.83. Formally, this quantity is defined as the expected value of the square of a random variable, minus the square of the expected value of the random variable; thus, it is the second moment of a random variable. One of the conditions for the central limit theorem to hold is that this quantity must be finite. For the Poisson (pwah-SAWN) distribution, this value equals the mean. This quantity is also the square of the standard deviation. Name this measure of how much a probability distribution is spread out.

ANSWER: variance

World History: Give the following related to ancient Rome.

<u>Team A</u>: The Pontifex Maximus was responsible for choosing the women who occupied this position, holders of which were chosen before the age of 10 and expected to remain chaste and maintain a sacred fire.

ANSWER: Vestal Virgins or Vestals [or Vestales; do not prompt on "Vesta"]

<u>Team B</u>: The fifth King of Rome is the one who allegedly began construction on this structure that sat between the Aventine and Palatine Hills and was the largest chariot racing stadium of ancient Rome.

ANSWER: Circus Maximus

Tossup: Throughout his life this man fought rumors that he had a homosexual relationship with Bithynian (bih-"THIN"-ee-"in") King Nicomedes IV (nik-oh-"ME"-deez "the 4th"). A scandal that occurred during a Bona Dea (BOH-nuh "DAY"-uh) festival led to this man divorcing his wife, Pompeia (pahm-"PAY"-uh), while noting that "[she] must be above suspicion." He commanded the troops that won the Siege of Alesia (uh-LEE-zhuh), which resulted in the capture of Vercingetorix (VUR-"sin"-JEH-tuh-riks) and the end of the Gallic (GAAL-ik) Wars. Shortly thereafter, he crossed the Rubicon (ROO-bih-kahn) River to begin a civil war in which he defeated Pompey (PAHM-pee) and became dictator. Name this Roman leader who was assassinated on the Ides of March in 44 BC.

ANSWER: Gaius Julius Caesar [accept either underlined portion]

Fine Arts: Name the following things based on clues about their appearance in paintings.

<u>Team B</u>: One of these objects comes out of a living room fireplace in the Rene Magritte painting *Time Transfixed*, and one moves towards the viewer in J.M.W. Turner's painting *Rain*, *Steam*, and *Speed*.

ANSWER: **train**s [or **locomotive**s]

<u>Team A</u>: 20th century American artist Jasper Johns is best known for his numerous paintings depicting these objects, a large blue and yellow one of which is held high in the background of the Rembrandt painting *The Night Watch*.

ANSWER: flags

<u>Tossup</u>: This figure's face is visible only in a mirror in a work that exemplifies a namesake painting "effect" and is nicknamed after the English residence Rokeby Park. This is the title figure of a painting whose background features a woman with a dress slung over her shoulder standing next to a girl rummaging through a chest. In that work, a dog lies at the foot of this figure while she holds flowers and reclines nude on a bed. Jacques-Louis David's (ZHAHK loo-EE dah-VEEDZ) last painting shows "Mars Being Disarmed by" this goddess, who titles a Titian (TEE-shun) painting showing this goddess "of Urbino." Name this Roman goddess whose "birth" was painted by Sandro Botticelli.

ANSWER: <u>Venus</u> [accept <u>Venus effect</u> or <u>Rokeby Venus</u> or <u>The <u>Toilet of Venus</u> or <u>Venus at Her Mirror</u> or <u>Venus of Urbino</u> or <u>Mars Being Disarmed by Venus</u> or <u>The Birth of Venus</u>]</u>

Life Science: Name these diseases with high mortality rates.

<u>Team A</u>: Prions (PRY-onz) are known to cause this disease, which kills nearly all the namesake creatures it infects. This condition is sometimes known by the acronym BSE ("B-S-E").

ANSWER: mad cow disease [accept bovine spongiform encephalopathy (en-SEFF-uh-lahp-uh-thee)]

<u>Team B</u>: The bacterium *Y. pestis* is known to cause this disease, which is primarily spread by fleas. It is characterized by the formation of pustules, unlike its septicemic (sep-tuh-SEE-mik) and pneumonic counterparts.

ANSWER: **bubonic plague** [prompt on "plague"]

Tossup: Until 2004, no human was known to have survived this disease, as it was thought to be 100% fatal. That survivor, Jeanna Giese (JEE-see), was given the Milwaukee Protocol, which put her in a coma to help combat this disease. The Purified Duck embryo vaccine is used to prevent this disease, which was historically called (*) hydro phobia since victims of it have difficulty swallowing. Name this disease often spread by "mad" animals, such as a dog that is foaming from the mouth.

ANSWER: <u>rabies</u> [accept <u>hydrophobia</u> before (*)]

World Literature: Answer the following about authors who wrote incredibly long novel series.

<u>Team B</u>: The 20 volume novel series *Les Rougon-Macquart* (lay ROO-gahn muh-KART), which was set during the French Second Empire, was penned by this naturalist author who also wrote the letter "J'Accuse" (ZHAH-cooz).

ANSWER: Emile Edouard Charles Antoine Zola

<u>Team A</u>: Magical stories such as *The Wild Ass's Skin*, and realist ones such as *Eugenie Grandet* ["YOU"-zhen-ee GRANday], are entries in this author's massive novel sequence entitled *The Human Comedy*.

ANSWER: Honore de **Balzac** (awn-uh-ray duh "ball"-zak)

<u>Tossup</u>: One author from this country wrote a 12 volume novel sequence, whose volumes include *Hearing Secret Harmonies* and *The Military Philosophers*, in his masterpiece *A Dance to the Music of Time*. Another author from this country wrote a six-volume series entitled *The Chronicles of Barsetshire*. Michael Henchard is the title character of one novel by an author from this country who also wrote *The Return of the Native*. Anthony Powell and Anthony Trollope are natives of what nation that was the setting for *The Mayor of Casterbridge*, which was written by native Thomas Hardy?

ANSWER: <u>United Kingdom</u> of Great <u>Britain</u> and Northern Ireland or <u>U.K.</u> [accept any underlined portion; accept <u>England</u>; do not accept or prompt on "Scotland" or "Wales"]

U.S. Government/Economics: Name these individuals who sought the Republican nomination for president in the Election of 2016.

<u>Team A</u>: This candidate began his run for the presidency shortly after resigning his position hosting a namesake Fox News talk show, which first aired in 2008. He created controversy during a Democratic debate by tweeting "I trust Bernie Sanders with my tax dollars like I trust a North Korean chef with my labrador."

ANSWER: Mike <u>Huckabee</u> [or Michael Dale <u>Huckabee</u>]

<u>Team B</u>: The presidential run of this candidate, which was suspended just prior to Christmas, included the posting of a video titled "How to Destroy Your Cell Phone." That video was posted in response to Donald Trump's release of this man's cell phone number after he called Trump a "jackass" following Trump's assertion that John McCain was not a war hero.

ANSWER: Lindsey Olin Graham

<u>Tossup</u>: This candidate was the subject of criticism for his role in try to uphold the wrongful 16-year conviction of Michael Wayne Haley for stealing a calculator. Jeff Roe is managing the campaign for this candidate, who pulled one of his TV ads after it was revealed that one of the featured actresses had previously appeared in adult films. In February 2016, this candidate fired one of his staffers who had posted a video which falsely depicts Marco Rubio disparaging the Bible. His campaign sent out a letter implying that Ben Carson was suspending his presidential campaign just before the Iowa caucus, which this man won by a slim margin over Donald Trump. Name this current junior Senator from Texas.

ANSWER: Ted Cruz (krooz) [or Rafael Edward Cruz]

Physical Science: Answer the following about physical quantities.

Team B: This SI unit is the only one that is directly defined by an object.

ANSWER: kilogram [do not accept or prompt on "gram" or anything else]

<u>Team A</u>: The triple point of water is used to define the SI unit that measures this quantity.

ANSWER: **temperature** [do not accept or prompt on "kelvin"]

<u>Tossup</u>: In CGS ("C-G-S") units, this physical quantity is measured using a unit abbreviated abC ("A-B-C"). Franklin bells demonstrate the usage of this quantity, which is stored in a Leyden Jar. Faraday's constant is equal to this quantity for a mole of electrons. Fractional values for this quantity are assigned to quarks. Milliken's oil drop experiment measured this physical quantity for the electron. The coulomb is the SI unit of what physical quantity which is often said to be "positive one" for the proton and "negative one" for the electron?

ANSWER: electric charge

World Geography: Name these bodies of water in Africa.

<u>Team A</u>: Lake Tana is the source of this African river, which ends shortly after flowing into the city of Khartoum ("car"-TOOM) from the east.

ANSWER: Blue Nile [or Abbay or an-Nil al-Azraq; do not prompt on or accept "Nile" or "White Nile"]

<u>Team B</u>: This gulf off the western coast of Africa contains the point where the equator and prime meridian intersect.

ANSWER: Gulf of Guinea

<u>Tossup</u>: The effect of the invasive Nile perch on this body of water is the subject of the documentary *Darwin's Nightmare*. An airport along this body of water was the site of a 1976 operation to rescue over 100 mostly Israeli hostages. The Kagera (kuh-GEH-ruh) River is the primary feeder of this lake, which borders the town of Entebbe (en-TEH-buh). This lake is due west of Serengeti (sair-en-GHEH-"tee") National Park and forms the shoreline along the national capital of Kampala (kahm-PAH-luh). Uganda, Kenya, and Tanzania ("tan"-zuh-NEE-uh) border the shores of what largest African lake, which is named after a British queen?

ANSWER: Lake Victoria [or Victoria Nyanza or Nalubaale or Nam Lolwe]

U.S. History: Give the following related to the early history of the United States.

<u>Team B</u>: The Battle of Bower Hill was the first skirmish of this rebellion of the 1790s, which was quelled by a Federal militia under the command of "Light-Horse Harry" Lee.

ANSWER: Whiskey Rebellion [or Whiskey Insurrection]

<u>Team A</u>: A snapping turtle named Ograbme ("oh-GRAB-me") bites the backside of a smuggler in a notable political cartoon criticizing this 1807 legislation that was passed in the aftermath of the *Chesapeake-Leopard* Affair.

ANSWER: Embargo Act of 1807

<u>Tossup</u>: This man wrote several articles denouncing the Stamp Act using the alias Humphrey Plough jogger ("plow-jogger"). Following the Revolutionary War, he served as the first U.S. Ambassador to the United Kingdom. This man's prominence increased after he defended the soldiers who killed Crispus Attucks (KRIS-pus AT-uks) and four others in the Boston Massacre. Three of his diplomats were caught up in the XYZ Affair that occurred during his presidency, which directly followed his eight year service as vice president. Name this Massachusetts Founding Father who was America's first vice president and second president.

ANSWER: John Adams [prompt on "Adams"]

Alphabet Round – Letter G

- 1. This author wrote about how the practice of enclosure caused "sweet Auburn" to decline in his poem "The Deserted Village."
- 2. 1795 treaty in which a coalition of Native American tribes ceded much of present day northwest Ohio and other lands to the U.S.
- 3. In Sikhism, this is the name of a "teacher" or "guide." The founder of Sikhism, Nanak, has this title, as does the Sikh holy book, the *Adi Granth*.
- 4. Sacred river of India whose largest tributary is the Yamuna River.
- 5. Astronomical "bursts" of this kind of radiation have been suggested as a possible cause of the death of dinosaurs. This kind of radiation has incredibly short wavelengths.
- 6. German author of the novel *The Sorrows of Young Werther*.
- 7. Giacomo Meyerbeer's *Robert the Devil* and Daniel Auber's *The Mute Girl of Portici* are both examples of this genre of opera, characterized by lavish sets and incredibly dramatic plots.
- 8. 1588 battle off the coast of the Netherlands at which the Spanish Armada was rebuffed in its attempt to invade England.
- 9. This supercontinent was comprised of modern-day South America, Africa, Australia and Antarctica. It was one of the two that formed from the breakup of Pangaea.
- 10. Saint Anselm's ontological argument was a widely-debated method in the Middle Ages which supposedly proved that this entity exists.
- 11. Seymour, who is a member of this family of fictional characters, kills himself in J. D. Salinger's "A Perfect Day for Bananafish."
- 12. Early film pioneer who directed *Intolerance* as the sequel to his best known film, 1915's *The Birth of a Nation*.
- 13. 13th century leader who founded the Mongol Empire.
- 14. In Greek myth, the name of the ivory statue created by Pygmalion that was brought to life by Aphrodite.
- 15. Iodine deficiency is largely responsible for this disease, in which the neck is enlarged because the thyroid gland is swollen.
- 16. Both *The Lexus and the Olive Tree* and *The World is Flat* by Thomas Friedman discuss this economic phenomenon of businesses and philosophies diffusing across the world.
- 17. Shakespeare's playing company, The Lord Chamberlain's Men, built this theatre, which burned down after a cannon was fired during a performance of *Henry VIII*.
- 18. Pennsylvania town that was the site of a July 1-3, 1863 battle which included fighting at Cemetery Ridge and Little Round Top.
- 19. 17th century female Italian artist of the painting *Judith Slaying Holofernes*.
- 20. This "state" of a system is the lowest energy state, which is contrasted with a system's excited state.

Alphabet Round - Letter G Answer

- 1. Oliver **Goldsmith**
- 2. Treaty of **Greenville**
- 3. **guru**s (GOO-rooz) [accept **Guru** Nanak or **Guru** Granth Sahib]
- 4. Ganges (GAN-jeez) River [or Ganga]
- 5. **gamma** ray
- 6. Johann Wolfgang von Goethe (GUR-tuh)
- 7. **grand** opera
- 8. Battle of <u>Gravelines</u> (GRAH-vuh-leen) [accept Battle of <u>Grevelingen</u>]
- 9. **Gondwana**land
- 10. **God**
- 11. Glass family
- 12. D.W. **Griffith** [or David Llewelyn Wark **Griffith**]
- 13. Genghis (GHENG-ghis) Khan
- 14. **Galatea**
- 15. goiter (GOY-tur)
- 16. **globalization** [accept **globalizing** or other word forms]
- 17. Globe Theatre
- 18. **Gettysburg**
- 19. Artemisia Gentileschi (jen-tuh-LESS-kee)
- 20. ground state

Lightning Round

1. The coefficients of this process and transmission can be calculated by the Fresnel equations. This phenomenon yields a fully polarized ray at the Brewster angle. Above the critical angle, this phenomenon occurs in a "total internal" fashion. Its namesake angle equals the angle of incidence. Name this phenomenon in which a light ray reverses direction upon encountering a surface.

ANSWER: <u>reflection</u> [accept word forms]

2. One object used by this duo was the subject of a lawsuit between its owner, Ruth Warren, and sheriff Henderson Jordan. Ivan Methvin's truck was used in a ploy to capture this duo, one of whom was described by newspapers as a "cigar smoking gun moll ("mall")." After stepping out of a stolen car along a Louisiana road, this duo was killed by a posse of police officers in a hail of machine gun fire. Name this murderous couple of the 1930s who were surnamed (*) Parker and Barrow.

ANSWER: **Bonnie** and **Clyde** [accept Bonnie Elizabeth **Parker** and Clyde Chestnut **Barrow** before (*); accept answers in either order for all parts]

3. This mountain range is home to a highly visited cave system known as Luray Caverns. The endangered Fraser fir is endemic to this mountain range, where a process known as mountaintop removal mining first developed. One of its highest peaks is Clingmans Dome. Mount Katahdin (kuh-TAH-din) is the northern terminus of the trail sharing its name with these mountains, whose subranges include the Allegheny (al-uh-GAY-nee) and Blue Ridge Mountains. Name this longest mountain range of the eastern U.S.

ANSWER: <u>Appalachian</u> (ap-uh-"LAY"-shun) Mountains [or <u>Appalachians</u>]

4. One play by this author inspired Jean Racine (zhawn raa-seen) to write about a foolish judge named Dandin in the play *The Litigants*. One of this author's works follows Trygaeus (try-GAY-iss), who feeds a giant dung beetle various foods so that he can fly off to heaven on it. In another work by this author, Xanthias (ZAN-thee-iss) and Dionysus (dye-uh-NEE-siss) visit the underworld and find a chorus of creatures making an untranslatable noise. This author lampooned Socrates (SAH-cruh-teez) in *The Clouds*. Name this ancient Greek playwright who wrote *The Frogs* and *Lysistrata* (LYE-sih-strah-tuh).

ANSWER: **Aristophanes** ("AIR"-uh-STAH-fuh-neez)

- 5. The setting for this painting was first witnessed by the artist during a tour given by John Sharp. Several potted plants appear on the porch of the Dibble House in the background of this work, in which one figure is modeled after Byron McKeeby, who was the artist's dentist. Eldon, Iowa provided the setting for this 1930 painting, in which a stern-faced woman stands next to a balding farmer holding a pitchfork. Name this most famous painting by Grant Wood. ANSWER: *American Gothic*
- 6. One journey to this location was the subject of Apsley Cherry-Garrard's book *The Worst Journey in the World*. In addition to the Terra Nova Expedition, reaching this location was the target of the Nimrod Expedition led by Ernest Shackleton. Before dying on his return journey, Robert Scott arrived at this location a month after it was first reached in December of (*) 1911 by Roald Amundsen (ROH-ahl AH-mun-sun). Name this geographic extreme located on Antarctica.

ANSWER: geographic <u>South Pole</u> [accept <u>90</u> degrees <u>south</u> latitude; prompt on partial answers; do not accept or prompt on "magnetic South Pole"; prompt on "Antarctica" before (*) but do not prompt thereafter]

7. Compounds formed from these bonds possess Madelung (MAD-ih-lung) constants. Large differences in atomic radii and electro negativity are characteristic of this type of bond, which also gives its name to a liquid salt. This type of bond allows formation of crystal lattices, as seen in table salt, which has formula NaCl ("N-A-C-L"). Name this type of bond in which electrons are transferred, in contrast to covalent bonds.

ANSWER: ionic bond

8. One word in this text originates from the Greek word *epiousios* (eh-pee-EW-"see"-ahss), which has also been translated to mean "super substantial." While reciting this text, some groups utilize the word "debts" instead of "trespasses." This text consists of seven petitions and ends with the words "for thine is the kingdom, and the power, and the glory, for ever and ever." First recited during the Sermon on the Mount was what Christian invocation which begins (*) "Our father, who art in heaven?"

ANSWER: Lord's Prayer [or Pater Noster or Oratio Dominica; accept Our Father before (*)]

9. The speaker of this poem notes that "poppy or charms can make us sleep as well" and that "soonest our best men with thee do go." It ends by noting that the title calamity "shalt die" even though the subject of this poem is "slave to fate, chance, kings and desperate men." This (*) tenth poem in the *Holy Sonnets* states "though some have called thee mighty dreadful . . . thou art not so." Name this poem about the end of life by John Donne (dunn).

ANSWER: "Death Be Not Proud" [accept "Holy Sonnet X" ("ten") or "the Tenth Holy Sonnet" before (*)]

- 10. As a fourteen-year old, this composer illegally transcribed from memory Gregorio Allegri's *Miserere* (mee-zuh-RAY-ray) upon hearing it only once. This composer's religious works include the Sparrow Mass and the Coronation Mass. The *Lacrymosa* and *Offertorium* sections of his requiem were not finished, but Franz Sussmayr completed them. Name this renowned Classical composer who was born in Salzburg, Austria and composed *A Little Night Music*. ANSWER: Wolfgang Amadeus Mozart [or Johannes Chrysostomus Wolfgangus Theophilus Mozart]
- 11. This ruler captured and later married Stateira II ("stay"-TEER-uh "the 2nd") following a battle he won along the Pinarus River. One year before his death, he installed Perdiccas (PER-dih-"cuss") as the leader of his Companion cavalry. Indian King Porus (POR-uss) was defeated at the Battle of the Hydaspes ("high"-DAS-peez) by this man, who conquered the Achaemenid (ah-KAY-meh-nid) Empire three years after winning the Battle of Issus (IH-suss). Philip II was the father and predecessor of what 4th century BC Macedonian king who conquered much of the known world? ANSWER: Alexander the Great [or Alexander III] of Macedon or Alexandros ho Megas; prompt on "Alexander"]
- 12. Max Wolfe found a number of objects in this region, including the family of "Veritas" objects. Giuseppe Piazzi discovered an object in this region, but it was later "lost" and "rediscovered" by Carl Gauss, who used the method of least squares to determine its orbit. It contains objects named after Hygeia ("high"-JEE-uh) and Pallas. Two of the largest proto-planets, Vesta and Ceres ("series"), can be found in this region formed from planetesimals. Name this collection of rocks that exists between Mars and Jupiter.

ANSWER: asteroid belt [prompt on "Solar System"]

13. The so-called "island of apples" is said to be the resting place of this hero, whose "Last Sleep" was depicted in a painting by Edward Burne-Jones. This man's father disguised himself as Gorlois (GOR-lah) to trick Lady Ygraine (EE-"grain") into sleeping with him. He died at the Battle of Camlann at the hands of his treacherous son Mordred; afterwards his body was taken to Avalon. In his youth, he pulled the sword in the stone and acquired Excalibur. Name this mythical king who owned the Round Table.

ANSWER: King Arthur

- 14. This nation is home to a cyber espionage group known as APT28 ("A-P-T-28"). In November 2015, a TV broadcast accidentally leaked this country's "Status 6" plans for a top secret nuclear torpedo. In that same month, one of its fighter jets was shot down after allegedly violating Turkish airspace. In 2013, the Chelyabinsk meteor burst over this nation, which is currently granting asylum to Edward Snowden. Name this Eurasian country whose President is Vladimir Putin. ANSWER: **Russia** [or **Russian Federation** or **Rossiya** or **Rossiyskaya Federatsiya**]
- 15. At the conclusion of one of this author's novels, a man named Cottard randomly goes on a killing spree but is only able to kill one dog. At the beginning of that novel by this author, thousands of rats die in the streets of Oran, worrying Dr. Bernard Rieux (ree-YOO). The line "Mother died today" begins another novel by this author in which "The Arab" is brutally killed by Meursault (mur-SOH). Name this Algerian-born author who wrote *The Plague* and *The Stranger*. ANSWER: Albert Camus (al-"BEAR" kam-OO)

16. One of this composer's operas ends with Hagen being dragged down to the bottom of a river and features the sky glowing a deep red as a conflagration kills all of its principle characters. Many of this composer's operas were performed at the Bayreuth Festival Theatre. A group of four operas by this composer includes *Gotterdammerung* (got-ur-DAM-uhroong) and *Die Walkure* (dee vahl-KOO-ruh). Name this German composer who included the song "Ride of the Valkyries" in his "Ring Cycle."

ANSWER: Wilhelm Richard Wagner (REE-kart VAHG-nur)

17. To secure an alliance this man spurned his lover Himiltrude ("HIM"-"ill"-trood), who bore his eldest son, nicknamed "the Hunchback." With his victory at the Siege of Pavia (PAH-vee-uh) over Desiderius (deh-sih-"DARE"-ee-us), he conquered the Kingdom of the Lombards. After the death of his son, Louis the Pious, his kingdom was split by the Treaty of Verdun. He came to power following the death of his father, Pepin the Short, in 768. Name this 8th and 9th century Frankish king who founded the Carolingian ("care"-uh-LIN-jee-un) Empire.

ANSWER: <u>Charlemagne</u> (SHAR-luh-"main") [or <u>Charles the Great</u> or <u>Charles I</u> or <u>Carolus Magnus</u> or <u>Karl der Grosse</u>; prompt on "Charles"]

- 18. The lumen of this structure is coated with the valves of Kerckring, which are circular folds that increase its surface area. The Sphincter of Oddi (OH-dee) controls one part of this (*) organ, whose final part is connected to the cecum (SEE-kum) of another structure. Chyme (kime) is absorbed in this organ after it passes through the pyloric ("pie"-LORR-ik) valve. The ileum (ILL-ee-um), duodenum (doo-AH-dih-num), and jejunum (jeh-JOO-num) are the three portions of this organ. Name this portion of the GI ("G-I") tract which is actually longer than its "large" counterpart. ANSWER: small bowel; prompt on "intestine" or "bowel"; prompt on "duodenum" before (*)]
- 19. Merrill Flood and Melvin Dreshner initially theorized this situation, a special example of which may involve a "donation." Robert Axelrod discussed the "iterated" form of this situation in his book *The Evolution of Cooperation*, which also analyzes Anatol Rapoport's "tit-for-tat" strategy. In this situation, there is one Nash equilibrium, much like the stag hunt. Name this game theory situation in which the namesake people may choose to cooperate or defect. ANSWER: **prisoner's dilemma** [accept variations like **prisoners' dilemma** or **prisoner dilemma**; accept iterated **prisoner's dilemma** or variations; prompt on "PD"]
- 20. In one novel named for this character, this character is locked in a boat and discovers that Jupiter Dunlap is the mysterious inhabitant of the ship. In addition to that detective novel, this character also titles a novel in which he enters McDougal's Cave and discovers that a box of gold has been left behind. In that book, he falls in love with Becky Thatcher and tricks some friends into whitewashing his Aunt Polly's fence. Give this friend of Huckleberry Fin who was created by Mark Twain.

ANSWER: **Tom Sawyer** [accept either name]