

Packet of Michigan, Michigan State Students

Packet 18

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Tossups

1. **Apollo killed one member of this species as revenge for the death of his son Asclepius and members of this species supposedly built the walls of Tiryns. Hesiod mentioned the three storm gods Steropes, Arges, and Brontes as members of this species. One individual of this mythological species lusted after the nymph (*) Galatea but she rejected him for Akis. Akis was then crushed by a member of this species. These workers of Hephaestus' workshop were, according to Homer, the sons of Poseidon—including one who was blinded by Odysseus. For 10 points, Polyphemus is a member of what class of beings that have one eye?**

ANSWER: Cyclopes (or kyklops)

2. **One culture that lived in this modern-day country were known as the Warriors of the Clouds, who built a walled-city named Kuelap. A common figure in the ancient mythology of this country was the mysterious "Staff God" who was depicted by multiple cultures. The oldest (*) city in the Americas was founded in this modern-day country in around 3500 BC. That city was Huaricanga. One culture that lived in this modern-day country drew large geoglyphs of animals like monkeys and hummingbirds that can only be seen from the air. That culture was the Nazca. For 10 points, name this country, whose city of Cuzco was also the capital of the Incan Empire.**

ANSWER: Peru

3. **This character proclaims "Meant me, by vent'ring higher than my Lot" and later tries to consume fruit that becomes ash at the end of the story in which appears. This character calls for a conversation in which the aggressive Moloch speaks as does Mammon. After landing on Mount Niphates, this character gets (*) Uriel to point him in the right direction. This character then disguises himself as a cormorant and then a toad to whisper to another character while she sleeps. This character famously says it is "Better to reign in Hell than serve in Heaven". For 10 points, name this antagonist of Milton's *Paradise Lost* who was cast out of heaven.**

ANSWER: Satan (accept Lucifer, prompt on "the devil")

4. **Conservation of the orbital form of this property can be used to predict barrier heights of pericyclic reactions by the Woodward-Hoffmann rules. Charge, Parity and Time Reversal each obey this property in particle physics. (*) Noether's theorem says that every differential form of this property for the action of a system has a related conservation law. Functions that have this property remain the same for any permutation of their variables. For 10 points, identify this mathematical property that holds for functions like the absolute value of x and x squared in which both sides are identical and is true for reflections.**

ANSWER: Symmetry (accept word forms like symmetrical, prompt on reflection before mention)

5. In Act 1 of this opera, a bell of a cigarette factory rings and Micaela asks questions of some soldiers. A male character sings “Votre toast, je peux [“poo”] vos le rendre” to woo a woman in this opera but both he and Officer Zuniga are unsuccessful. In the most famous aria of this opera, “L'amour est enfant de bohème” is repeated by the soprano who compares love to a rebellious (*) bird. Don Jose and Escamillo vie for the same woman who sings the “Habanera” aria in this opera. For 10 points, identify this opera about a gypsy by Georges [“Jorge”] Bizet.

ANSWER: Carmen

6. A 1902 work called *The Hand of Man* was made by this artist and depicts a smoking train coming from the distance and some telephone poles. This artist depicted a tall tree and a man in a work entitled *Spring Showers*. A numerically-named gallery was managed by this man and featured the work of Alvin Langdon, Henri Rousseau and Paul Cézanne. This member of the (*) Camera Club of New York wrote an essay about a work of his that mentions his depiction of “a straw hat” and a man with “white suspenders”. That work is his *Steerage*. For 10 points, identify this photographer of *Winter—Fifth Avenue* who was married to Georgia O’Keefe.

ANSWER: Alfred Stieglitz

7. In a short story by this author, a sanitarium patient falls in love with her doctor before deciding to be with a novelist. That story is “The White Flower”. A memory of a birthmark on a character’s breast haunts a character created by this author. The protagonist of one novel by this author meets his dead father’s mistress Mrs. Ota who later commits suicide. The protagonist (*) Kikuji then elopes with her daughter Fumiko. One character created by this author is a ballet critic who has never seen a ballet and is overwhelmed by the Milky Way at the story’s end after seeing the geisha Komako several times at a hot spring. For 10 points, name this Japanese author of *Thousand Cranes* and *Snow Country*.

ANSWER: Yasunari Kawabata (accept either name in either order)

8. The rate of substitution K can be described as $N u + 1 \text{ over } N$ in a model for this phenomenon. Absorbing states denoted $X_{sub t}$ and $2N$ factor into the Wright-Fisher model which models this phenomenon along with Kimura’s (*) model. When populations are small, they are more susceptible to this phenomenon by the bottleneck effect. If this phenomenon exists, then the population is not in Hardy-Weinberg equilibrium. For 10 points, identify this change in allele frequencies caused by different random samplings of the population--as opposed to natural selection.

ANSWER: Genetic Drift (accept Sewall-Wright effect)

9. This thinker argued against the seesaw theory in one work that also, according to John Hicks, was one of the first to use the term “liquidity”. Output is equal to output demanded in his “cross” which can be used to derive the IS curve. This thinker thought that high saving (*) rates would have an adverse effect on output. This economist’s school of thought said that governments could shift aggregate demand to the right which would lower unemployment and lessen the effects of the Great Depression. For 10 points, name this British economist who advocated for expanding public spending during recessions in his *General Theory*.

ANSWER: John Maynard Keynes

10. One person who fought against this man ignored the advice of Charidemus who wanted to fight this man alone. Before one battle, the opposing scouting party was captured by this man who told forces led by this man about the opposition's traps. This man—rejecting the advice of Parmenio—decided then not to attack at night. (*) A Turkish battle in which this leader fought had his forces move through the Cilician Gate and this leader, whose subordinates were the Diadochi, was unsuccessfully pushed to cross the Pinarus River. That battle was Issus. For 10 points, identify this Macedonian son of Philip II who conquered the Persian empire once led by Darius.

ANSWER: Alexander the Great (prompt on Alexander, accept Alexander III of Macedon)

11. The partial differential equation used to model this process includes the dot product of the del operator and a proportionality constant for molar flux. That coefficient is also encountered in Fick's laws for this process, and has units of (*) area per unit time. Gases escaping through an object with diameter smaller than the mean free path of the gaseous molecules undergo a related process with a similar name. It's not effusion, but in Graham's Law, the ratio of the rate of this process for two gases is equal to the inverse ratio of the gases' molar masses. For 10 points, name this process that describes the movement of molecules from areas of high to low concentrations.

ANSWER: diffusion (prompt on effusion before mention)

12. During one campaign, this politician said of Rudy Giuliani that "'There's only three things he mentions in a sentence: a noun, and a verb and 9/11.'" In 1987, this politician made a namesake report that scrutinized Supreme Court nominee Robert Bork. This politician said if Mitt Romney was elected, Wall Street would put a crowd (*) "back in chains". This politician served as the head of the Senate Judiciary Committee and the Foreign Relations Committee and ran unsuccessfully for president in both 1988 and 2008. For 10 points, identify this former Delaware Senator who was the Vice President under Barack Obama.

ANSWER: "Uncle" Joe Biden

13. Once a year, groups of individuals may stay in these locations for a period of ten days. In the early twentieth century, one of these locations constructed from mud was rebuilt in Djenné. These locations make use of a *minbar*, and *wudu* is a form of washing often carried out in these places. These buildings contain indentations in their walls to facilitate (*) *qibla*, and are occasionally attached to schools called *madrasahs*. In these structures, *muezzins* stand in towers called minarets, and in these places, ceremonies are often led by *imam*. For 10 points, identify this Muslim houses of worship.

ANSWER: mosques

14. During one election, despite running competitive candidates in the previous elections, this party did not nominate a candidate, but endorsed a pro-peace New Yorker running with Jared Ingersoll. New England members of this party discussed secession during the War of 1812 at the (*) Hartford Convention and unsuccessfully ran Rufus King in their last election. A president of this political party appointed the Midnight Judges. This political party favored a stronger relationship with Britain, supported the First Bank of the United States and opposed the Democratic Republicans. For 10 points, name this early American political party of John Adams and Alexander Hamilton.

ANSWER: Federalist Party

15. In a story by this author, a woman accepts a marriage proposal by sending her suitor a cactus, and in another, a homeless man named Soapy attempts to be arrested so he can sleep in a jail cell rather than outside. This author of “The Cop and the Anthem” wrote a story in which two men are given the names Snake-eye and Old Hank by the son of (*) Ebenezer Dorset. That story revolves around two thieves who fail to collect the ransom on an obnoxious child they kidnapped. For 10 points, identify this author of “The Ransom of Red Chief.”

ANSWER: O. Henry (accept William Sidney Porter)

16. One ruler of this modern-day country’s namesake kingdom had introduced monetary reform after other throwing his brother, Andrew’s son, Solomon. One of that kingdom’s rulers was legendarily crowned king of this country by Pope Sylvester II in 1000 AD. That ruler was (*) Saint Stephen of the Arpad dynasty. This modern-day country was a focal point of the 1848 revolutions seeing Lajos Kossuth rebel against the Austrians. During the Cold War the Soviet Union crushed a 1956 rebellion in this country under its leader Imre Nagy [pr. “naj”]. The latter was succeeded by Janos Kadar who implemented Goulash communism in this Warsaw Pact country. For 10 points, name this former Communist Eastern Bloc European country that has its capital at Budapest.

ANSWER: Kingdom of Hungary

17. The world’s oldest surviving grand music hall, Wilton’s Music Hall, is in the East side of this city. This city’s Chinatown was once in its neighborhood of Limehouse, but now Gerrard Street runs through it. The Shaftesbury Memorial Fountain and a famous Coca-Cola sign are in (*) Piccadilly Circus in this city. Stage productions can be seen in this city’s Regent’s Park. The most famous church in this city is located on Ludgate Hill and is St. Paul’s Cathedral. For 10 points, what city contains Westminster and Big Ben and is the capital of the United Kingdom?

ANSWER: London, England (anti-prompt on “City of Westminster” which is a city inside of London)

18. A vector related to this physical law is equal to one plus two cosine theta dot the normal vector. The time a particle in this law takes to reach its destination can be described as the sum of two quantities: one of which is over v and another is over v prime. Fermat’s (*) optical path length is differentiated in the derivation of this physical law. This law, which is also named for Descartes [pr. “Day cart”], sets the ratio of the sines of angles equal to the ratio of the phase velocities, which is also equivalent to the ratio of the indices of refraction. For 10 points, identify this equation that describes the refraction of light through a medium.

ANSWER: Snell-Descartes Law (accept Descartes's Law before mention)

19. In this novel, a Milan tavern supposedly resembles Rick’s café from *Casablanca*. One character in this novel attributes his cancer to divine causes and dies on St. John’s Eve. A map in this novel will supposedly allow its holder to control telluric currents. This novel opens as the protagonist hides in the Conservatoire des Arts et Metiers and (*) plots to find his kidnapped friend. This book was translated first by William Weaver, and Belbo, Diotallevi, and Casaubon develop the satirical conspiracy “The Plan” in this novel. For 10 points, identify this mystery by Umberto Eco that partially shares its title with a French philosopher.

ANSWER: Foucault’s Pendulum

20. Art critic John Ruskin attacked the artist of this painting for painting “the foulest things he could see by rushlight” which coincides with the large black spot at the back of this painting aside from a yellow and blue flag. This painting was once attacked with a shoemaker’s knife. On the right-hand side of this painting, a man holds a large drum while a dog sits by him. A (*) chicken is near an illuminated girl in this painting. A lieutenant in this enormous painting has a yellow sash and a white hat. For 10 points, name this painting in which a man in black and a man in white stand in front of a militia in the dark and was painted by Rembrandt.

ANSWER: The *Night Watch* (or *Militia Company of District II under the Command of Captain Frans Banninck Cocq* or *The Shooting Company of Frans Banning Cocq* and Willem van Ruytenburch or *Die Nachwacht*)

21 (TB). One poem by this author laments the “Henglish drizzle” and makes a quick reference to “China ‘crost the Bay”. The speaker of one poem by this author takes up the title entity to “veil the threat of terror” and “reap his own reward”. In another poem, this author repeats the title word in the first, third, and fifth lines of the four stanzas and the speaker advises the reader to “bear the truth you’ve spoken”. In his most famous collection of stories, this author of “The White Man’s Burden” created a boy who raises elephants named Toomai and the wolf-raised boy Mowgli. For 10 points, identify this author of “If—” and *The Jungle Book*.

ANSWER: Rudyard Kipling

[Editor’s Note: That first poem was “Mandalay”.]

22 (TB). During his time at Harvard, this scientist published a paper on black body radiation in which he suggested that light exerts pressure, and later coined the term “photon.” This scientist also developed the concept of activity and invented the term “fugacity.” In 1916, this scientist published the paper “The Atom and the Molecule,” in which he postulated the idea of covalent bonding. This scientist also formulated an acid-base theory in which acids are described as electron pair acceptors. For 10 points, name this American chemist known for his diagrams depicting bonds and lone pairs in a molecule.

ANSWER: Gilbert Newton Lewis

Bonuses

1. This politician was made chief secretary of the treasury under his predecessor and was also named chancellor of the exchequer to that same politician who he would replace after the party's leader's resignation in 1990. For 10 points each:

[10] Identify this Tory politician who was called a "gray man" and was PM during Black Wednesday.

ANSWER: John **Major**

[10] Major succeeded this female politician as Prime Minister of the UK. She was known as the "Iron Lady".

ANSWER: Margaret **Thatcher**

[10] When Thatcher was PM, she shut down a strike in this industry. This industry's strike was led by Arthur Scargill who Thatcher called the "enemy within".

ANSWER: **coal mining** (accept either)

2. In one of these reactions, di-amines and di-acyl chlorides can be reacted to form nylon. For 10 points each:

[10] Name this type of reaction in which molecules link together and *lose* small byproducts; possible products of these reactions include polyamides and polyacetals.

ANSWER: **condensation** polymerization [do not reveal polymerization]

[10] Condensation reactions can help form these compounds which are made of monomers. Chain-growth can also create these compounds.

ANSWER: **polymer**

[10] The most common plastic is this polymer with subunits of C₂H₄; name this polymer abbreviated PE whose synthesis involves applying catalysts to the simplest alkene, from which this polymer derives its name.

ANSWER: **polyethylene** (accept **polyethene**)

3. This novel opens with Raoul Duke and his lawyer driving through the desert while high on LSD. For 10 points each:

[10] Identify this work of gonzo journalism which is considered a rumination on the failure of 1960s counterculture.

ANSWER: **Fear and Loathing in Las Vegas**

[10] *Fear and Loathing in Las Vegas* is a work by this American author.

ANSWER: Hunter S. **Thompson**

[10] Thompson wrote an essay calling this annual event "Decadent and Depraved." The early piece of gonzo journalism about this event had sketches done for it by Ralph Steadman.

ANSWER: **Kentucky Derby**

4. For 10 points each, name some things about the times when the use of religious images were opposed by both religious and Byzantine authority.

[10] Name that time period during which depictions of religious figures was directly opposed by the leaders of the Eastern Church.

ANSWER: **Iconoclasm**

[10] The first Iconoclast period started after images were removed from this Gate which is a part of the Great Palace of Constantinople.

ANSWER: **Chalke** Gate

[10] Leo's son was the fifth of this regnal name and continued the iconoclasm. Another rule of this name issued the Edict of Milan.

ANSWER: **Constantine** (accept **Constantine** the Great)

5. This equation's integral form relates the electric flux to a surface integral of the electric field dot dA [pr. "D A"]. For 10 points each:

[10] Name this Maxwell equation that says that the divergence in the electric field is proportional to the total charge density.

ANSWER: **Gauss' Law** (do NOT accept Gauss' Law of Magnetism)

[10] Gauss' Law can be derived from this physical relationship which says that the charge on two objects is proportional to the products of the charges divided by the squared distance between them.

ANSWER: **Coulomb's Law**

[10] This constant appears in Gauss' Law by dividing the total charge density, rho. Symbolized epsilon, the units on this value are Coulombs squared inverse Newtons inverse meters squared.

ANSWER: **permittivity of free space** (or the **vacuum permittivity**, prompt on electric constant)

6. Answer some questions about literature of the former Soviet Union for 10 points each:

[10] Aleksandr Solzhenitsyn was banished to one of these Soviet forced labor camps and wrote about his experiences known as their *Archipelago*.

ANSWER: **Gulags** (or **Glavnoye Upravleniye ispravitelno-trudovyyh Lagerey**)

[10] Solzhenitsyn also wrote a novel titled for *One Day in the Life* of this character who is sentenced to a gulag for 3653 days and must hide a piece of metal to avoid going into "the hole".

ANSWER: Ivan **Denisovich** Shukhov (or just **Shukov**)

[10] This Ukrainian-born author was killed during Stalin's purges and wrote the *Red Cavalry*, a collection of short stories that describe this author's experiences with the Red Army during the war against the Polish.

ANSWER: Isaac **Babel**

7. This country's official languages include English, Afrikaans and Zulu. For 10 points each:

[10] Identify this nation which contains the cities of Durban and Johannesburg, and encompasses the Cape of Good Hope.

ANSWER: Republic of **South Africa**

[10] Identify this river, the second longest in South Africa which empties into the Indian Ocean, and forms part of the border between Botswana and South Africa.

ANSWER: **Limpopo** River

[10] Name this kingdom which is completely enveloped by South Africa and has a capital at Maseru.

ANSWER: The Kingdom of **Lesotho**

8. Many early Sienese artists used this method of painting. For 10 points each,

[10] Identify this form of fast-drying painting which involves dissolving pigments in egg yolk.

ANSWER: **tempera**

[10] Tempera was largely replaced by oil paintings due to the work of Early Netherlandish painters, such as this artist of *The Arnolfini Wedding*.

ANSWER: Jan **van Eyck**

[10] Tempera has seen somewhat of a revival in the 20 century; Andrew Wyeth used tempera to create this painting, depicting a young polio-stricken girl lying in a field in Maine.

ANSWER: **Christina's World**

9. For 10 points each, answer some questions about the major discovery of Alfred Wegener.

[10] Wegener theorized this phenomenon when he realized that the remains of different creatures could be found in vastly different climates. This phenomenon explains the movement of North America and Europe.

ANSWER: **Continental drift**

[10] Rising basaltic magma at divergent plate boundaries drives this process that is partially responsible for continental drift. This process also generates new oceanic crust.

ANSWER: **Seafloor spreading**

[10] Magnetic striping that occurs at divergent plate boundaries provides evidence of this recurring phenomenon through geologic time. This phenomenon provided more evidence to support continental drift.

ANSWER: **Polar Wandering**

10. The speaker of this poem longs for the "world enough and time" to spend with a certain woman. For 10 points each:

[10] Identify this poem in which the speaker tries to get a woman to sleep with him by saying he will "Love you ten years before the flood".

ANSWER: **"To His Coy Mistress"**

[10] "To His Coy Mistress" was written by this British poet of "An Horatian Ode Upon Cromwell's Return from Ireland".

ANSWER: Andrew **Marvell**

[10] Marvell wrote this 97-stanza poem that is a canonical example of a country house poem. This poem ends with the enigmatic "Let's in: for the dark Hemisphere/Does now like one of them appear."

ANSWER: **"Upon Appleton House, to my Lord Fairfax"**

11. Answer the following about the mythical Trojan War for 10 points each:

[10] Odysseus and a man of this name who was known as the "Greater" fought over Achilles' armor after Achilles got shot in the heel. Another hero with this name led the Locrian contingent during the Trojan War.

ANSWER: **Ajax** (accept **Ajax the Greater**, **Ajax the Lesser**, **Telamonian Ajax**)

[10] This Trojan prince was killed during the Trojan War by Achilles. Achilles did not exactly respect this man, as evidenced by how this leader's corpse was dragged around Troy by Achilles' chariot.

ANSWER: **Hector**

[10] After the fall of Troy, the Greeks ruthlessly decided to kill this infant son of Hector by throwing him off the walls of Troy as his mother Andromache watched.

ANSWER: **Astyanax** (or **"Scamandrius"**)

12. This word comes from the Latin for "method," or "manner," although all seven major categories of this concept originated in the music of Ancient Greece. For 10 points each:

[10] Name these variations on typical musical scales, which generally feature an alteration of one note. Examples of them include the "Dorian," and "Corinthian" ones.

ANSWER: **mode(s)**

[10] A typical musical scale is composed of this many notes. An interval of this many notes, along with fourths, and fifths is considered "perfect," and is called an octave.

ANSWER: **eight**

[10] This mode is very similar to a natural minor scale, but the second note is a minor rather than a second. The dominant of this mode is often called the "Spanish gypsy scale" because it is often used in flamenco dances.

ANSWER: **Phrygian** mode

13. In 2003, this TV channel's rebranding included dropping the slogan "Music First" and creating a new box logo. For 10 points each:

[10] Name this TV network owned by Viacom that began as a subsidiary of MTV, but now mainly broadcasts occasionally music-based reality shows including *Dating Naked* and *Celebrealty*.

ANSWER: **VH1**

[10] This long-running VH1 reality series focuses on the relationships of various rap and R&B artists; it has spinoffs located in Atlanta and Hollywood, and the current seventh season of its original New York installment includes Remy Ma and Cardi B.

ANSWER: **Love & Hip-Hop**

[10] On March 24, 2017, VH1 began airing the ninth season of this reality competition series produced by World of Wonder. Lady Gaga served as a guest judge on the episode of this show, where competitors vie for the title of "America's Next Drag Superstar."

ANSWER: **RuPaul's Drag Race**

14. During the reign of Emperor Ling, this dynasty experienced the Taoist Yellow Turban rebellion. For 10 points each:

[10] Identify this Chinese dynasty that also names the majority ethnic group in China.

ANSWER: **Han** Dynasty

[10] The Han defeated this other Asian empire in 109 BC. Emperor Wu sent fifty thousand troops to fight this empire. The Han eventually seized this empire's capital Wanggeom-seong. This empire then collapsed.

ANSWER: **Gojoseon** [pr. "Kochosun" but be lenient] (or **Ancient Joseon**, prompt on "Joseon")

[10] The Han dynasty was followed by this numerically-named period of Chinese history where the Shu Han dynasty's Liu Bei claimed lineage from the Han. This period is known for its warfare and population decrease compared to the Han.

ANSWER: **Three Kingdoms** Period

15. This long poem, that was written in trochaic tetrameter recounts the stories of how the Earth was made, the origin of the first man, the shamanistic main character of the work. For 10 points each:

[10] Name this poem which recounts the stories of characters such as Väinämöinen and Lemminkäinen

ANSWER: **Kalevala**

[10] The Kalevala is the national epic of Karelia as well as this northern European nation with capital at Helsinki.

ANSWER: **Finland**

[10] According to the Kalevala, the world was created by one of these things which was lain on the knee of Ilmatar, the goddess of the air.

ANSWER: an **egg** (accept "**world egg**", "**cosmic egg**," and "**mundane egg**")

16. Pauline Kael is considered a pioneer in her writings on this art form. For 10 points each,

[10] Identify this art form. Others who write about this art form include A.O. Scott and Peter Travers.

ANSWER: **film** (prompt on "cinema", "movies" or "kinography")

[10] This film critic was the subject of the documentary *Life Itself* and hosted shows with Richard Roeper and Gene Siskel.

ANSWER: Roger **Ebert**

[10] Ebert often said that his favorite film was *La Dolce Vita*, which was directed by this Italian filmmaker. This director is also known for such films as *Roma* and *Eight and a Half*.

ANSWER: Federico **Fellini**

17. For 10 points each, answer some questions about the Wild, Wild, West.

[10] The gunfight at this American location only was about 30 seconds and was between the Cochise County Cowboys and a group of officers that included Doc Holliday.

ANSWER: O.K. **Corral**

[10] Holliday was allied with several officers with this surname. This surname belonged to the Tombstone City Marshal Virgil as well as a man who would later kill Frank Stilwell in Tucson named Wyatt.

ANSWER: **Earp**

[10] This outlaw fought in the Lincoln County war and was sentenced to death after killing Sheriff Brady. He would then escape from prison.

ANSWER: **Billy the Kid** (or William Henry **McCarty** Jr.)

18. Rituals of this religion are known as puja. 10 points each:

[10] In which most popular Indian religion do individuals spend their lives attempting to reach moksha?

ANSWER: **Hinduism**

[10] This Hindu Trimurti god was born from the forehead of Brahma. His name means “the Auspicious One” and he is often referred to as the Destroyer.

ANSWER: **Shiva**

[10] Shiva’s mount was this bull, thought to have cursed Ravana that his kingdom would be burnt by a monkey. This bull is also the bringer of truth and righteousness.

ANSWER: **Nandi**

19. This word appears in an essay that describes the “civil” and “social” version of it and advocates for a government that allows for its citizens to exercise their capacity for happiness.

[10] For 10 points, name that word which appears in the title of that 1859 essay.

ANSWER: **Liberty** (on “**On Liberty**”)

[10] John Stuart Mill wrote “On Liberty”. Mill also is famous for being one the forefathers of this philosophical school along with Jeremy Bentham. Mill also wrote a work titled for this idea.

ANSWER: **Utilitarianism**

[10] Mill also wrote *On Nature*. In that essay, Mill gives nature a two-part definition. One definition says nature is *not* this word often used to describe human influence.

ANSWER: **Artificial** (prompt on “not natural”, “man-made” and similar phrases)

20. This long cellular object helps some eukaryotic and prokaryotic cells with movement. For 10 points each:

[10] Identify this object that is characteristic of Mastigophora as opposed to cilia.

ANSWER: **Flagellum** (or **Flagella**)

[10] In Eukaryotes, a flagellum is made up of nine fused pairs of these cytoskeletal structures that when nucleated, make up the centriole.

ANSWER: **microtubules**

[10] The cytoskeleton is also made of a filament named with this protein. Each filament of this type is surrounded by three myosin filaments.

ANSWER: **actin** filament

21. (TB) This painting is sometimes known by its alternative title, *La Gioconda*. For 10 points each,

[10] Identify this portrait of a member of the Gherardini family, painted by Leonardo da Vinci.

ANSWER: **Mona Lisa**

[10] The *Mona Lisa* is an early example of the aerial type of this artistic technique. In the linear form of this technique, lines converge to a vanishing point in a piece's background.

ANSWER: **perspective**

[10] When the *Mona Lisa* was stolen from the Louvre in 1911, it was briefly taken to this Italian art museum, which began construction under the direction of Giorgio Vasari.

ANSWER: **Uffizi** Gallery