

Oxford Open 2014: Do You Want to Get with Women?

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Round 7

Old OUQSonians

TOSSUPS

1. In this work, a central character discovers his partner has a sarcoma lesion on the day of his grandmother's funeral. His boyfriend later hears voices but tells his ex drag-queen nurse that he finds them arousing. In the same hospital that Prior Walter is in, a ghost sings a Yiddish lullaby to a lawyer who is dying of AIDS but insists it's liver cancer, Roy Cohn. His assistant, Joe Prior, is a gay Republican Mormon with an agoraphobic wife. For 10 points, name this 1993 Pulitzer Prize winning play by Tony Kushner.

ANSWER: *Angels in America: Millennium Approaches*

2. This football player was sent off on his international debut against Colombia in 2007. His early club career included a season at Groningen before joining Ajax in 2007, where his 49 goals in 48 games in the 2009-10 season helped his side win the KNVB Cup. Sent off for a deliberate handball against Ghana in the 2010 World Cup quarter-final, this player's goals this season include a brace that ended the tenure of Andre Villas-Boas in a five-nil win at Tottenham Hotspur. Banned twice for biting and once for racially abusing Manchester United's Patrice Evra, this is, for 10 points, what Uruguay and Liverpool striker?

ANSWER: Luis (Alberto) Suárez (Díaz)

3. John Haygarth's clinical demonstration of this phenomenon used "Perkins tractors", and it was earlier discussed in the teaching of William Cullen. Naloxone is able to antagonise one aspect of this phenomenon leading to the suggestion that endogenous opioids play a role in establishing its effects. This phenomenon is more prominent in subjectively measured outcomes, such as depression and pain. Usually restricted to clinical trials and vital to homeopathy, this is, for 10 points, what effect in which a medically inactive treatment can be used to deceive a patient.

ANSWER: Placebo effect (or nonspecific effect)

4. This leader changed his name from Sabbatius to honor his aging uncle. He signed the Eternal Peace with Persia, which lasted nine years until Khosrau invaded his empire. This leader trusted in the eunuch Narses to subdue the army of King Totila as well as to put down the Nika riots begun by various

chariot factions. Collecting as a digest much of Roman law in a namesake *Codex*, this emperor conquered Ostrogoth and Vandal kingdoms with his general Belisarius. For 10 points, name this man who built Hagia Sophia as the Byzantine emperor.

ANSWER: **Justinian** the Great [or **Justinian** I; or Flavius **Justinianus**]

5. This author's self-penned epitaph claims that he "lived nightly and drank daily / And died playing the ukulele." In a novel by this man, a well off youth struggles to acquaint himself with his shipmates on the *Oedipus Tyrannus*, so he spends much thinking of the girl he left behind, Janet. In addition to that novel about Dana Hilliot, *Ultramarine*, this author wrote a novel set on the Day of the Dead in Mexico. On that day Yvonne returns to the dipsomaniac British consul, Geoffrey Firmin. For 10 points, name this author of *Under the Volcano* who drank himself to death.

ANSWER: (Clarence) Malcolm **Lowry**

6. One character with this surname was described as an "immortal fuck" by Clay Regazzoni in a 2013 film. A politician with this surname called Michael Gove "crass" for politicising the memory of the First World War, and this is also the surname of the painter who depicted a woman rising from her lover's lap in front of a piano in *The Awakening Conscience*. The job title of another man with this surname was notoriously spoonerised by James Naughtie during that man's tenure as Culture Secretary. For 10 points, name this surname shared by Niki Lauda's rival and the current Health Secretary.

ANSWER: **Hunt** (accept James **Hunt** or Tristram **Hunt** or William Holman **Hunt** or Jeremy **Hunt**)

7. One chemical technique used to study these chemical features can be operated in "tapping mode". The Eley-Rideal mechanism describes chemical reactions occurring in these locations whose thermodynamics are described by the BET theory. Auger [OH-jay] electron spectroscopy uniquely observes atoms in these locations, which contain terraces and steps that can be studied by atomic force microscopy. For 10 points, adsorption and desorption take place at what boundaries where gas and solid phases meet?

ANSWER: heterogeneous gas-solid **surfaces** (or gas-solid **interfaces**; or gas-solid **phase boundary**; anti-prompt on surface features such as "step", "terrace" or "adsorbate" before "these locations"; prompt on "boundary" until mentioned)

8. A mounted knight is wielding a war hammer on the extreme right of one work by this artist, who painted dogs running between four equally spaced trees in *The Hunt in the Forest*. This artist painted a horse in profile with a rider in grey raising a baton atop a detailed cenotaph in his *Funerary*

Monument to Sir John Hawkwood. A knight has fallen in exact parallel to a broken lance pointing to the vanishing point in one of three canvases on the same topic by this artist, which are respectively in the Louvre, the Uffizi and the National Gallery. For 10 points, name this painter of *The Battle of San Romano* who was obsessed with mathematical perspective.

ANSWER: Paolo Uccello [ooh-CHAY-loh] (or Paolo di Dono)

9. A plague is sent by God in this book after the people speak against the rebellion of Korah being put down, and in this book, Caleb and Joshua speak of the land of “milk and honey”. This book also contains the story of Balaam’s she-ass who speaks after she is whipped by her master, and Moses seeks to draw water from a stone. Ending with the Israelites ready to cross the River Jordan to the Promised Land of Canaan, this book begins with God asking Moses to register all Israelite men over the age of 20. For 10 points, name the fourth book of the Bible whose name concerns a census.

ANSWER: Book of Numbers

10. According to *Metamorphoses*, hyenas regularly perform this action, which Vishnu performed in order to claim the elixir of life as the avatar Mohini. Loki performed this action at will, such as when appearing as Thökk to refuse to weep Baldr out of Hel, as well as performing this act along with changing in to a horse in order to conceive the eight-legged horse Sleipnir. After he struck two mating snakes with a stick, Tiresias was punished in this way by Hera. For 10 points, name this type of mythological metamorphosis that also affects Virginia Woolf’s Orlando and the manga hero Ranma.

ANSWER: changing sex (or changing gender; or changing between man and woman; accept equivalents)

11. After the Willow Song, Desdemona sings an Italian setting of this text before being killed by her husband in Verdi’s *Otello*. The popular setting of this text attributed to Giulio Caccini is widely understood to be a hoax by the Russian composer Vavilov. Gounod’s version of this text superimposed it with an additional melody over a prelude from Bach’s *Well Tempered Clavier*. One famous version substitutes this Latin text in full for the original setting of Walter Scott’s “Lady of the Lake”: that version is properly named “Ellen’s Dritter Gesang” and is by Franz Schubert. For 10 points, name this Latin hymn that blesses the Virgin and exhorts her to pray for us sinners.

ANSWER: Ave Maria (or Hail Mary)

12. In one fictional short story within this novel a group of a children play a game in which they lie down under airplanes as they are about to take off in order to be levitated by them. After worrying about the strangeness of their

son, the parents of one character in this novel are appeased to discover he spends his afternoons playing football, only to be dismayed that he is in fact refereeing. That is the plot of one of the radio soap operas created by one of the title character of this novel, Pedro Camacho. For 10 points, name this novel about Varguitas by Mario Vargas Llosa.

ANSWER: *Aunt Julia and the Scriptwriter*

13. Early inhabitants of this island include the Saqqaq culture. The United States occupied this island to prevent a German occupation during World War II and later based one node of its Ballistic Missile Early Warning System on this island home to Thule Air Base. Operation Chrome Dome was ended after a US B-52 carrying nuclear weapons crashed here in 1968. Known as Kalaalit Nunaat in one official languages, this island has its capital at Nuuk, which was formerly known as Godthåb in Danish. For 10 points, name the largest island in the world.

ANSWER: Greenland [accept Kalaalit Nunaat before it is mentioned]

14. This lawyer hired private detectives to find evidence against Oscar Wilde in the Queensberry libel trial. After resigning from Lloyd George's government over the issue of Irish conscription, this politician had earlier eased Bonar Law's accession as leader of the Conservative Party in 1911 by not standing; instead he became a "single-issue" politician as the first signatory of the Ulster Covenant and the founder of the Ulster Volunteers. For 10 points, name this "uncrowned King of Ulster" who fought Home Rule as leader of the Irish Unionists.

ANSWER: Sir Edward Carson [or Baron (Lord) Carson of Duncairn]

15. The "Hohmann transfer" is an example of one of these physical systems with high energy requirements. These paths are confined to a plane normal to the angular momentum vector of a system, and they occur as bounded solutions for motion in a central field when the system energy is negative. In a two-body problem they are concentric about a barycentre. Examples of these for electrons with discrete values of angular momentum were used in the derivation of the Rydberg formula in the Bohr model of the hydrogen atom. Kepler's laws describe the properties of, for 10 points, what curved paths followed by satellites about planets?

ANSWER: orbits

16. This document may have been signed at the house of the financier André Ruiz, and it triggered a riot at Fiac. Pope Clement VIII claimed that the passing of this law "crucified" him and denounced it for allowing "freedom of conscience." It decreed that members of the minority religion were not exempt from paying tithes and had to respect Catholic holidays, but it did

establish safe havens such as La Rochelle. It was later revoked by the Edict of Fontainebleau. For 10 points, name this 1598 Edict by Henry IV of France that granted rights to Huguenots.

ANSWER: **Edict of Nantes**

17. In one poem this poet claimed that “all joys are due to thee” of “full nakedness.” In another work he stated that “though some have called thee / Mighty and dreadful” the title concept “shalt die.” In addition to the elegy “To His Mistress Going to Bed” this man wrote of “a love so much refined, / That ourselves know not what it is.” This poet of the Holy Sonnets and “A Valediction Forbidding Mourning” lamented “how little that which thou deniest me is” in his best-known poem. For 10 points, name this poet of “The Flea”.

ANSWER: John **Donne**

18. The climax of season one of this TV show involved a stolen screwdriver later fashioned into a sex toy. Flashbacks in the series featured a breast implant being punctured, a transgender woman buying trainers with her son, and a child being mistakenly shot instead of a deer. The protagonist finds herself torn between her writer boyfriend and her drug trafficking ex-girlfriend, whilst avoiding a stalker called crazy eyes. Based on a memoir by Piper Kerman, Taylor Schilling plays inmate Piper Chapman in, for 10 points, what Netflix Original Drama series set in a women’s prison?

ANSWER: **Orange is The New Black**

19. This process conserves the V minus A current according to a theory of it which superseded the four fermion contact theory. The Kurie plot is used to analyse the energy spectrum of this process, which was studied by Chien-Shiung Wu in cobalt-60. Electron capture is the inverse of this process, whose main radiative emission exhibits a distribution of kinetic energies that prompted Wolfgang Pauli to suggest the existence of the neutrino. For 10 points, name this weak force process that converts neutrons to protons by emitting electrons.

ANSWER: **beta**(-minus) decay (accept **weak** force or **weak** decay until “Kurie plot”, prompt on these terms thereafter)

20. This conflict inspired the attack by King Dodon on Shemakha in *The Golden Cockerel*. In this war, one side decided to hasten its attack plans after surviving a surprise assault on Sandepu. The losing side’s fleet could not take on British coal after the Dogger Bank Incident. It began with an attack on Port Arthur, and it ended after Theodore Roosevelt negotiated the Treaty of Portsmouth. The land Battle of Mukden and the victory of Admiral Togo at Tsushima occurred during, for 10 points, what first defeat of a

European country by an Asian country?

ANSWER: **Russo-Japanese** War

BONUSES

1. The Academy Award for the Best Film in a Foreign Language is the only Oscar awarded to an entire country. For 10 points each:

[10] Which country was awarded the Foreign Language Oscar in two successive years, first for *Babette's Feast* in 1987 and then for *Pelle the Conqueror* in 1988?

ANSWER: (Kingdom of) **Denmark** (or Kongeriget **Danmark**)

[10] This home nation of director Michael Haneke received the Best Foreign Language Film Oscar in 2012 for *Amour*, despite the film being shot in French.

ANSWER: (Republic of) **Austria** (or Republik **Österreich**)

[10] Italy received a double victory when this film won the Best Foreign Language Film Oscar in 1998, and its star and director Roberto Benigni also winning the Best Actor Award in that year.

ANSWER: **Life is Beautiful** (or **La vita è bella**)

2. Great American Novels existed before Steinbeck, and even before Melville. Answer these questions on American literature published before 1800, for 10 points each.

[10] Publishing under the persona of Geoffrey Crayon, this early American writer created Rip Van Winkle and the not-so-quiet Dutch settlement of Sleepy Hollow.

ANSWER: Washington **Irving**

[10] This novel by Susanna Rowson was first published in London, but became a best seller on publication in the USA in 1794. This novel's eponymous heroine undergoes a similar journey, being seduced by John Montraville and then taken across the Atlantic.

ANSWER: **Charlotte Temple** (or **Charlotte: A Tale of Truth**)

[10] This 17th century author's poetry collection *The Tenth Muse Lately Sprung Up in America* is said to be the first female author to be published in the British colonies in North America.

ANSWER: Anne **Bradstreet**

3. For 10 points each, answer the following about American espionage:

[10] Give the shared surname of the only Americans to be executed for espionage during the entire Cold War. Both were put to the electric chair in 1953.

ANSWER: Julius and Ethel **Rosenberg**

[10] The Rosenbergs were convicted under the Espionage Act, whose

constitutionality was upheld by this 1919 Supreme Court case. In his decision on this case, Oliver Wendell Holmes introduced the concept of “clear and present danger” as a limit on First Amendment rights.

ANSWER: Schenck v. *United States*

[10] This longest serving Justice of the United States Supreme Court granted a stay of execution to the Rosenbergs, only to be overruled by his colleagues.

ANSWER: William O(rville) Douglas

4. This phenomenon is described by a namesake law devised by Michael Faraday. For 10 points each:

[10] Name this effect in which a voltage is created by an alternating current, storing energy in a magnetic field.

ANSWER: electromagnetic induction (do not accept “inductance”)

[10] In the magnetostatic approximation, the inductance of a coil can be inferred by computing the magnetic field caused by a given current using this integral method, which can be derived from Ampère’s law.

ANSWER: Biot-Savart law

[10] This phenomenon in real inductors arises when high frequency alternating current is preferentially carried in a thin layer close to the surface of a conductor.

ANSWER: skin effect

5. Answer the following on textbook organic chemistry reactions that don’t really work in practice, for 10 points each.

[10] Your Grignard reaction will not work without scrupulously dry glassware and a lot of iodine catalyst to activate the surface of this alkaline earth metal used to form the active reagent.

ANSWER: magnesium (or Mg)

[10] Don’t even think about trying this doubly eponymous reaction that aims to substitute an aromatic halide with an alkyl group by using a Lewis acid catalyst like aluminium chloride. You’ll get a mucky mix of products.

ANSWER: Friedel-Crafts alkylation (do not accept “Friedel-Crafts acylation”)

[10] These two-ring heterocycles with a nitrogen atom at the 1 [“one”] position turn up in lots of natural products – don’t synthesise them with the Skraup method, whose successive sulphuric acid and oxidation steps will destroy most interesting substituents.

ANSWER: quinolines (do not accept “isoquinolines”)

6. Identify these mediaeval philosophers, for 10 points each.

[10] This 13th century scholastic philosopher and author of *Summa Theologica* worked to reconcile Aristotelian philosophy with Christian

theology.

ANSWER: St Thomas **Aquinas**

[10] This author of *The Book of Healing* and *The Canon of Medicine* worked to reconcile Aristotelianism and Neoplatonism and the existence-essence distinction within Islamic philosophy.

ANSWER: **Avicenna** (or **Ibn Sina** or **Pur Sina**)

[10] This pioneer of Neo-Confucian thought in the Song Dynasty chose the Four Books of classical Confucianism, and emphasised the importance of learning and study in his arguments with Lu Jiuyuan.

ANSWER: **Zhu** Xi (or **Chu** Hsi)

7. For 10 points each, answer the following about the history of the Old West:

[10] In legend, this sometime fugitive and lawman was holding aces and eights when he was shot by Jack McCall in Nuttall and Mann's saloon in Deadwood, Dakota Territory.

ANSWER: "Wild Bill" (James Butler) **Hickok**

[10] Deadwood was established in this range of hills after a gold rush that began in the early 1870s.

ANSWER: **Black** Hills

[10] Wild Bill Hickok may have been the first victor of a quick-draw duel when he fought one at Springfield in this state. This state's city of Independence was often considered the start of the Oregon Trail.

ANSWER: **Missouri**

8. Answer the following about post WWII German literature, for 10 points each.

[10] The title German housekeeper helps the army deserter Ludwig Götten escape from the police, thereby attracting attention from a tabloid journalist, in this 1974 novel.

ANSWER: *The **Lost Honour of Katharina Blum*** (or ***Die verlorene Ehre der Katharina Blum***)

[10] This German author of *The Lost Honour of Katharina Blum* also wrote *Group Portrait with Lady* and *Billiards at Half-Past Nine*.

ANSWER: Heinrich **Böll**

[10] Böll, with other German authors such as Gunter Grass and Alfred Andersch, was a member of this influential literary group, which aimed to encourage young authors in Germany. Taking its name from the year it was founded, it was officially disbanded in 1977.

ANSWER **Group 47** (or **Gruppe 47**)

10. Name these novels featuring badly driven horse-drawn carriages, for 10 points each.

[10] Benjy Compson bellows when Luster drives the carriage the wrong way at the close of this William Faulkner novel. Earlier, T.P. risked turning over the same carriage due to Mother's indecision over leaving behind her misbehaving granddaughter Quentin.

ANSWER: *The Sound and the Fury*

[10] In this novel, the servant Selifan overturns a carriage while driving drunk, so getting Chichikov muddy on his way back from trying to buy this novel's title items from Manilov.

ANSWER: *Dead Souls* [by Nikolai Gogol]

[10] This Jane Austen work opens with a carriage accident, after which the injured Mr Parker recuperates with the Heywood family.

ANSWER: *Sanditon*

10. Answer the following on the heroic acts of Heracles, for 10 points each.

[10] Hercules's seventh labour was to capture one of these animals on Crete after being given permission by Minos. Interestingly, Minos' mother was abducted by Zeus while in the form of this animal.

ANSWER: bull

[10] Heracles is often depicted wearing the skin of this creature, which he slew in the first of his Labours.

ANSWER: the Nemean Lion (prompt on partial answer)

[10] This cousin of Heracles tasked him with the Labours as penance after he slew his family. This King of Mycenae owed his accession to Hera interceding to slow the birth of Heracles.

ANSWER: Eurystheus

11. For 10 points each, name these practitioners of the fabled "honorable resignation" in post-war British politics:

[10] This sometime Labour Foreign Secretary resigned from Tony Blair's Cabinet in 2003 in protest over the invasion of Iraq.

ANSWER: (Robert Finlayson) "Robin" Cook

[10] This politician resigned together with Nye Bevan and his junior minister John Freeman over the introduction of NHS charges in 1951.

ANSWER: (James) Harold Wilson

[10] This politician criticized "a growing emphasis on class war and Marxist dogma" in the Labour Party on resigning from the Callaghan government and crossing the floor to the Conservative Party. Others viewed him as a traitor.

ANSWER: Reginald Ernest Prentice

12. Molecular biologists sometimes seek to deliberately change the genome of a sample. For 10 points each:

[10] This general term describes a change to the sequence of nucleotides in

an organism's DNA, which could be induced chemically or due to exposure to UV radiation.

ANSWER: **Mutation**

[10] These elements of a genome can move between different locations, and often include repeated or mirrored sequences of bases. Their behaviour can be exploited for deliberate mutagenesis.

ANSWER: **Transposons** (or **transposable** elements; accept **jumping genes**)

[10] This type of enzyme cuts DNA at a specific point in a sequence of base pairs, allowing a route to some types of site-specific mutagenesis in the genome.

ANSWER: **Restriction** enzyme (or **restriction** endonuclease)

13. Your bonuses are on hits of 2013, for 10 points each.

[10] Which American singer got into a bit of bother after 'twerking' to Robin Thicke's "Blurred Lines" at the 2013 VMA awards?

ANSWER: Miley **Cyrus**

[10] Miley Cyrus got into even more bother with this song, whose video involving her writhing naked on a swing and licking a sledgehammer suggestively.

ANSWER: **"Wrecking Ball"**

[10] By contrast, this singer had a bother-free *annus mirabilis* in 2013, featuring on "Blurred Lines" as well as featuring on Daft Punk's "Get Lucky".

ANSWER: **Pharrell** Williams

14. Name the following people involved with Neoclassicism, for 10 points each.

[10] This French neoclassical painter created works inspired by both antiquity, including *Oath of the Horatii*, and contemporary events, such as *The Death of Marat* and *The Coronation of Napoleon*?

ANSWER: Jacques-Louis **David**

[10] This neoclassical sculptor, famed for his marble nudes, created *Perseus with the Head of Medusa*, along with noted statues of Napoleon and George Washington.

ANSWER: Antonio **Canova**

[10] This German art historian and archaeologist was the author of the 1764 work *History of Ancient Art*, which had a key role in the rise of Neoclassicism.

ANSWER: Johann Joachim **Winckelmann**

15. Name these cheeky ways of making money in market economics, for 10 points each.

[10] This practice involves selling a borrowed security, hoping to repurchase it at a lower price before returning it, so making a profit from the difference.

ANSWER: **short selling** (or **selling short** or **shorting**)

[10] This practice takes advantage of a price difference between two or more markets, making a profit from that difference by simultaneously buying and selling a good. In gambling it is a method of constructing a guaranteed profits by making bets with multiple bookmakers.

ANSWER: **arbitrage**

[10] This practice involves purchasing enough shares of a company to threaten a hostile takeover, only to allow the target company to prevent it by selling back the shares at an inflated price.

ANSWER: **greenmail**

16. Identify the following Old Oxonians, for 10 points each:

[10] Like Katie McGettigan, this author read English at Exeter College, which he used as the inspiration for the fictional Jordan College in the *His Dark Materials* trilogy.

ANSWER: Philip **Pullman**

[10] This woman developed more enthusiasm for science at Somerville College than Mike Levy did. Her research group used X-ray crystallography to resolve the structures of penicillin and insulin.

ANSWER: Dorothy (Mary) Crowfoot **Hodgkin** (accept Dorothy **Crowfoot**)

[10] Like Tom Speller, this man dabbled in politics as a student at Jesus College. As leader of the People's National Party, he led Jamaica to self-government, though after the failure of the West Indies Federation he lost power to Alexander Bustamante.

ANSWER: Norman (Washington) **Manley**

17. Mathematical functions can often be expressed as polynomial series. For 10 points each:

[10] Name this general polynomial expansion about a point. The special case expanding ' f of x ' about ' x equals zero' is called a Maclaurin series.

ANSWER: **Taylor** series (or **Taylor** expansion)

[10] This property describes a function with a Taylor series that converges in some domain of x about the point of expansion.

ANSWER: **analytic**

[10] This approximation to a function is expressed as the ratio of two polynomials, and often gives a better or more stable series than the Taylor series of like order.

ANSWER: **Padé** approximant

18. This battle is sometimes known as the Battle of the Three Emperors. For 10 points each:

[10] Name this 1805 victory for Napoleon at a town in Moravia.

ANSWER: Battle of **Austerlitz**

[10] The defeat at Austerlitz was suffered by Austro-Russian forces led by this Tsar, who relieved Marshal Kutuzov of direct command before the battle.

ANSWER: **Alexander I** Romanov

[10] Napoleon's successful strategy encouraged the Russians to adopt a position on this prominent high ground, which Alexander then abandoned to assault the deliberately weakened French right flank.

ANSWER: **Pratzen** Heights (or **Pratzen** Plateau)

19. Name these 19th century opera heroines who commit suicide, for 10 points each:

[10] This singer commits suicide by jumping off a castle parapet at the end of an eponymous Puccini opera.

ANSWER: **Aida**

[10] Having sung the Flowers Duet in the first act, this heroine of a Delibes [duh-LEEB] work eats a poisonous flower in the third act when she realises that the British officer Gérald has a military duty to abandon her.

ANSWER: **Lakmé**

[10] This character takes poison to avoid submitting herself to the Count di Luna in Verdi's *Il Trovatore*.

ANSWER: **Leonora**

20. Answer these questions on the pilgrims of Geoffrey Chaucer's *Canterbury Tales*, for 10 points each.

[10] This pilgrim tells her fellow travellers that her five marriages have given her a lot of life experiences. Her tale hinges on the thorny issue of what women want in marriage.

ANSWER: **Wife of Bath**

[10] This pilgrim from Oxford tells the tale of Patient Griselda, which he claims to have heard in Padua and is not the "merry" tale he's asked for.

ANSWER: **Clerk**

[10] This pilgrim's tale is about a love triangle between Averagus, Dorigen, and Aurelius, and involves rocks being moved by magic. The tale illustrates "gentillesse" [JEN-tee-less] – good conscience – which is a quality this pilgrim values highly in others.

ANSWER: **Franklin**

21. You are hosting a dinner party – do you know enough science to pull it off? For 10 points each:

[10] You keep your preprandial G&Ts cool by putting ice cubes in them. This works because the melting of ice is this type of thermodynamic process

in which a system takes in heat from its surroundings.

ANSWER: **endothermic**

[10] You enhance the flavour of your roast meat by ensuring that your oven gets hot enough to achieve this meat-browning reaction, in which amino acids react with sugars at temperatures well above 100 degrees C.

ANSWER: **Maillard** reaction

[10] You achieve brilliant social intercourse at your party by treating your seating plan as a linear optimisation problem and solving it using this algorithm, which is named for a class of geometric entities including the tetrahedron.

ANSWER: (Dantzig's) **simplex** algorithm