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The Art of Physick Made Plain & Easie

by D. Fambresarius

**This modernized herbal is a work in progress and will be continuously updated.*

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The Definition of Medicine

There was a saying by the famous Philosopher and Orator Tully, that a conversation about any subject could be undertaken. But it should begin always begin with a definition of the subject.

What is Medicine?

Medicine has been defined in various ways by ancient physicians:

- **Galen:**
 - The art of preserving present health and restoring lost health. (*Constitution of Art*)
 - The knowledge that protects health and expels disease. (*Introductory Book*)
 - **Hippocrates:**
 - The process of supplementing what is lacking and removing what is excessive in the body. (*Treatise on Wind*)
 - **Herophilus:**
 - The knowledge of what is healthy, unhealthy, or neutral. (*The Subject*)
-

Note: What follows is a simplified dialogue between the Dean and a Candidate on medicine.

Dean:

- **Medicine is not an art because:**
 - An art is a system of consistent principles used to obtain an end. However, the principles of Medicine are not consistent but varied.
 - Medicine deals with both healthful and harmful things, which are inherently different.

Candidate:

- **Medicine as an art:**

- While the subject matter may seem varied, the precepts are unified in purpose.
- All medical principles work toward the same end.

Dean:

- **Medicine is not a science because:**

- Science deals with consistent and unchanging phenomena. Medicine is concerned with inconsistent states of being. It is subjective as opposed to objective.
- In medicine there are many controversial and disputed topics and the theories of medicine are not always certain.

Candidate:

- **On medicine as a science:**

- While outcomes may be changeable, medicine is based on necessary and permanent axioms.
- Universal principles in medicine are established by demonstration and are certain.

Dean:

- **Medicine is not knowledge because:**

- Medicine deals with specific cases through direct observation of sensory details. These cannot be known through demonstration as intellectual knowledge is acquired. It cannot give us universalizing concepts.
- The end goal of science is understanding. The end goal of medicine is to obtain health.

Candidate:

- **On medicine as knowledge:**

- Medicine discusses healthy and sick bodies in general, not particular individuals.
- It uses methods of knowledge, even if physicians consider sensory details in practice.

Dean:

- **Hippocrates' definition of medicine:**

- Hippocrates' definition of medicine is false, because neither addition nor removal are categories of medicine.

Candidate:

- **Hippocrates' definition of medicine:**

- Neither of these actions alone (addition or removal), but both in combination, are a category of medicine.

Dean:

- **Category of Medicine:**

- If there must be a category it is neither addition nor removal, but aptitude.
- A category includes specific characteristics, for example, an 'animal' is a category for both humans and other animals.
- Addition and removal are outcomes of medical treatment, not defining characteristics. Neither of which can be considered a category of medicine.

Candidate:

- **Classification of Medicine:**

- Hippocrates definition of medicine isn't based not Essential, but from the Effects.
- In the definition, the actions of medicine are a figure of speech for the underlying aptitude of the actions.

What is Health?

Dean:

- Then for the definition of Herophilus' I refute it: There is no such thing as a neutral body. His definition of medicine as 'a science of things, wholesome, unwholesome, or neither' is flawed.

Candidate:

- I disagree.

Dean:

- A wholesome body is one which is healthy, an unwholesome body struggles with disease. But the body is always either in a state of health or illness. There is no neutral body.
- I will prove it. Health and illness are direct opposites according to Aristotle. Therefore, since health and sickness are diametrically opposed, there can be no intermediate state between them.

Candidate:

- It is said that there is a neutral constitution, when the body is neither completely sick nor completely healthy.
- Health and sickness are completely opposite according to Aristotle but not according to the physicians.

Dean:

- Galen teaches that health is balance and sickness is an imbalance. But there is no medium between them.
- **Note:**
 - *The original text uses Symmetry and Disorder instead of Balance and Imbalance. This is*

because the principles of holistic medicine were based on the 'nature of being' rather than anatomy. The symmetrical whole instead of the mechanistic frameworks of later medical practice.

- Health in a condition that produces good actions. Sickness produces bad actions. There is no middle ground.
- I declare this based on the authority of Galen who said, When a body ceases to be healthy, it becomes unhealthy. And in another place, he says: When the body transitions from health into sickness, the transition is imperceptible. And in another place, he states: One who can act and do as they were accustomed, according to all the body's functions, is in good health; one who cannot is unsound or sick. The spectrum of health extends from the most perfect operation to a noticeable decline in operation- the disease beginning from that noticeable deterioration.

Candidate:

- Galen sometimes views health in a larger perspective, than at other times. I assert that there are two different states – one that is firm and stable and another in disposition and feeling, which is not as long-lasting but rather unstable and susceptible to every minor disruption or injury.
- Galen considers someone healthy if the habitual functions of their body do not cease their proper activities, even though they operation only weakly. Certainly, he also counts among the healthy those neutral states in decline that are falling into sickness, as well as those neutral states in health who are in recovery. He encompasses the state of neutrality within the bounds of health.
- However, when Galen excludes both conditions as unsound and insufficient to act as nature requires, he acknowledges a neutral condition that is not sound. This is because preservation isn't appropriate, but it is necessary for neutral states falling into disorder, by way of maintenance, and for those newly recovered from a disorder, by way of restoration.

What are the Parts of Medicine?

Dean:

- Natural philosophy is a speculative science, while medicine is an active practice. Therefore, physiology cannot be a part of both disciplines. Physiology is a subdomain of natural philosophy and so it should not be considered a part of medicine.
- Natural philosophy perfectly describes the human body. Therefore, physiology is a part of natural philosophy.

Candidate:

- There are four parts to medicine. Physiology or the study of nature and natural processes. That which understands and takes into consideration health. Pathology, which addresses symptoms and conditions. The treatment of disease and remedies. Some divide these into five parts, separating the consideration of causes and symptoms into two distinct areas, those they are both encompassed within pathology.
- Physiology is not a part of natural philosophy.
- Philosophy understands the body in general terms, considering its natural state. In contrast,

physiology, which is regarded as the primary branch of medicine, studies the body in detail – whether it's healthy, diseased, or in a state between the two. Some even argue that medicine is specifically focused on humans.

What are the Essential Components for Acquiring a Comprehensive Understanding of Medicine?

Candidate:

- Three things, the natural which is studied through physiology. The non-natural which are examined in relation to health and maintenance. Disease processes where pathology focuses on understanding them and therapeutics deals with treating and preventing them.

Dean:

- What things do you call 'natural'?

Candidate:

- What is 'natural' is what constitutes the Nature of Man.

Dean:

- How many things do you believe to be 'Natural' to Man?

Candidate:

- Seven things. The Elements. The Temperaments. The Parts. The Humors. The Spirits. The Faculties and Functions. Of the Elements.
- **See:** [7 Natural Things](#)

What is an Element?

Candidate:

- An '[Element](#)' is the most fundamental unit of matter. According to Galen's definition, it represents the simplest possible component – one that cannot be further subdivided into different substances. Thus, an element is the most basic component of a complex substance.
- An element is a simple substance from which things are originally created and into which they ultimately break down.
- **See:** [7 Natural Things](#)

Dean:

- By this logic bones, muscles, flesh and other tissues would be considered the elements of the human body, since they are simple structures from which complex organs are built and into which organs can ultimately break down.

- **Note:**

- Candidate is explaining the term 'element' from a Humoral / Galenic perspective, where the elements are fire, air, water, and earth that all things are made of and eventually return to.
- The dean is explaining that their definition would also explain an almost mechanistic approach to the parts of the human body. This is an early attempt at identifying what we know understand to be cells, molecules, atoms etc.

Candidate:

- Not true: They appear simple to our senses, but they are all composed of the four **Elements** and when they ultimately breakdown they return to their basic **Elements** which can then form new combinations.

Dean:

- How can this be!? Aren't the **Elements** themselves the common beginnings of all natural substances dissolved into Matter and Form?
- **Note:**
 - The Dean is asking for clarification, is the candidate actually saying that we can then manipulate the elements and return them to their natural state?

Candidate:

- This seems true in theory, but it doesn't reflect reality. The **Elements** can only be divided through analysis or reason and not by Operation.
- **Note:**
 - The Candidate says, while in theory we could, we cannot physically do so. We can only rely on the theory that the elements return, it cannot actually be proven.

What is the Difference Between Principles and **Elements**?

Candidate:

- First, the **Elements** can emerge as individual elements or emerge from one another (via interaction and decay processes). But Principles emerge from neither, they are the foundations that produce all phenomena.
- Secondly, the Elements are related to **Principles**. However, the **Elements** are the building blocks of physical tangible matter. Principles are abstract laws that govern nature and are intangible.

How Many Elements Are There?

Candidate:

- Four: Fire, Air, Water, and Earth. Which Hippocrates called: Hot, Moist, Cold, and Dry.
 - **See:** [Primary Qualities](#)

Dean:

- What evidence do you give that there are only four **Elements**?

Candidate:

- I will give you three pieces. First, they are the first four **Elements** observable with the senses. Second, because they work together to form all known matter. Third, because everything eventually reverts back into these four **Elements**.

Dean:

- Demonstrate how Human Bodies are composed of all four **Elements**.

Candidate:

- It is the general consensus that all our bodies follow a clear organization. This form originating from the seed and maternal blood of our parents, creating a mixture of the Humors. This mixture of Humors is influenced by what is put into the body for nourishment. Whether that nourishment be meat from land or sea, fruit, herbs and flowers, it is all a mixture of the **Elements**.
- Our nourishment comes from the **Elements**.
- The **Elements** influence the Humors.
- The Humors influence the Similar Parts.
- The Similar Parts influence the Organic Members.
- The Organic Members influence the Organic Parts of the Human Body.
- That human bodies consist of the elements is obvious from the last part of our conversation. When a person dies, according to the laws of nature, they return to nature. This natural process demonstrates how humans are composed of the four fundamental elements. The bodies natural warmth disperses like heat or fire. The breath divides; part fire, part air. The bodies fluids revert to water. The solid parts- once they lose their moisture- dry out and crumble to earth.
- Hippocrates was the first to explain the concept. He taught that when a person dies, everything returns to its original elemental state. As he described it:
- Moist elements return to moisture. Dry elements return to dryness. Hot elements return to heat. Cold elements return to cold.

Dean:

- Explain more clearly how the human body is created from the four elements. The human body isn't made directly from the elements themselves, but rather from their combined properties. And even these properties aren't pure, but are mixed and balanced through their interactions with each other.
- List the properties of each element.

Candidate:

- **Fire:** Extremely hot. Moderately dry.
- **Air:** Extremely moist. Moderately heat.

- **Earth:** Extremely cold. Moderately moist.
- **Water:** Extremely dry. Moderately cold.
- These elements are the basic carriers of these qualities. Our bodies are composed of their mixture and their balance. When this balance is maintained, we experience good health. When the balance is disrupted or altered by some external factor, illness occurs.
- **Note:**
 - Here the candidate is explaining the 4 qualities and what they give rise to in the body. You can think of each element has have a major vs a minor quality.

What is a Mixture?

Candidate:

- A mixture is the combination of altered substances that are capable of being blended together.

Dean:

- How is a mixture made, according to either the qualities, forms, or complete substances?

Candidate:

- The qualities are altered, the forms are united, and the complete elements mix with each other as wholes.

Dean:

- Explain the process of mixing more precisely.

Candidate:

- Alteration comes before mixing – specifically, the conflict between opposing qualities precedes the interaction through physical contact. All physical reactions require contact. Therefore, when elements combine to form a mixed substance:
 - They must make physical contact.
 - They then interact through their opposing properties.
 - Through this mutual interaction, they break down into the smallest possible parts.
 - These parts intermingle completely.
- This is what we call a complete mixture.

Dean:

- So you're saying substances mix with substances?

Candidate:

- Why wouldn't they?

Dean:

- Because mixing requires opposition and substances themselves don't oppose each other.

Candidate:

- A substance doesn't naturally oppose another substance simply because it's a substance. Rather, substances oppose each other through their properties. For example:
 - Fire doesn't resist fire in it's basic nature.
 - But fire and water oppose each other through their properties (fire being hot, water being cold).
- Alteration changes properties, not fundamental forms. When elements interact:
 - Their properties change through mutual interaction.
 - They become balanced through breaking down and mixing.
 - Once their opposing qualities are neutralized, they can easily combine.
 - From the union of each element's form, a new composite substance emerges with its own unique form.
- **Note:**
 - This is a basic description of the process used in modern chemistry via chemical reactions, neutralizing through mixing, and the creation of new compounds. It demonstrates that medical professionals at the time were well versed in at least the basics of alchemy.

What is a Temperament?

Candidate:

- A temperament is a balanced proportion of the four primary elemental qualities (hot, cold, wet, dry) that allows natural bodily functions to work properly. Different authorities defined it in various ways:
- However, I disagree with the last definition because the form of a combined substance is a substance itself, while temperament is merely a property or characteristic related to qualities.

Dean:

- Do you think the primary qualities can be mixed without mixing their elemental substances?

Candidate:

- No, that's impossible. While temperament and mixture are different concepts – mixture referring to the elements themselves and temperament referring to their qualities- they are inseparable.
- You cannot have:
 - A mixture without active qualities.
 - Temperament without all the elemental substances.
- Therefore, temperament is the harmony of the four main qualities, arising from the mixture of all the elements.
- **Note:**

- The four main qualities were heat, dry, moist, and cold. Candidate is saying that without the elements mixing (fire, water, earth, and air), we wouldn't have their qualities. And without the qualities themselves in harmony within the body, we wouldn't have a temperament.

Dean:

- How many different types of temperament are there?

Candidate:

- There are nine types.
- Eight imbalanced types, which include four simple types.
- Four Simple Types:
 - Hot
 - Cold
 - Moist
 - Dry
- Four Compound Types:
 - Hot & Moist.
 - Hot & Dry.
 - Cold & Moist.
 - Cold & Dry.

Dean:

- What is considered the 'temperate' state?

Candidate:

- The temperate states is what the Greeks referred to as 'well-tempered'. It is seen as the ideal temperament that all others are compared to.

Dean:

- How many types of temperate state are there?

Candidate:

- There are two types of temperate state:
 - An absolute and balanced temperament.
 - A temperament that is calibrated for 'justice' across different categories.
- **Note:**
 - A balanced temperament is one which contains a balanced proportion of all four qualities (hot, cold, wet, dry).
 - The second temperament is described in more detail by the Candidate further down.

Dean:

- What do you mean by an ‘absolute and balanced’ temperament?

Candidate:

- That is a temperament in which the elements are mixed together in an even, equal proportion – no more heat than moisture, no more cold than dryness.
- Galen believed that this absolutely balanced temperament is more imaginary than real. Even if such a perfect equilibrium were to occur, he thought that it would only last for a very short time.

Dean:

- What do you mean by a temperament “calibrated for justice across different categories?”

Candidate:

- The “temperament calibrated for justice across different genres” refers to a state that does not contain an exact, evenly balanced blend of opposites. Rather, it is a moderate midpoint that is appropriate for the specific nature and requirements of a given context or category.
- In other words, the ideal temperament is not determined by a strict mathematical or arithmetic equivalence between the elements. Instead, it is defined by a kind of geometrical proportion – a balanced mean that best suits the particular genus or species in question.
- ‘Justice’ in this context refers to giving each thing what it is due, according to its proper nature or worthiness.
- **Note:**
 - The idea is that there may not be a single universal ideal temperament, but rather temperaments tailored to the needs and characteristics of different people, environments, or situations. A “just” or appropriate temperament would be one balanced for the particular circumstances.

Dean:

- What are simple, uncompounded temperaments?

Candidate:

- Such temperaments are those which one of the four qualities (heat, cold, moist, dry) predominates excessively.

Dean:

- And what are the compounded temperaments?

Candidate:

- Compounded temperaments are those which two qualities predominate excessively. The “hot and moist” temperament has an excess of both heat and moisture, with heat overpowering cold, and

moisture overpowering dryness. The “cold and dry” temperament has more cold than heat, and more dryness than moisture.

Dean:

- You have distinguished the temperaments into simple and compound types, but that is misguided, because there are no truly simple temperaments.

Candidate:

- I disagree.

Dean:

- Prove it. A simple temperament would be one where a single element predominates, like heat in a fiery temperament or cold in a watery one. However, each element possesses two qualities. For example, fire is both hot and dry. Therefore, there can be no temperament that is truly simple.

Candidate:

- What is considered a “simple” temperament is one where a single quality predominates, not a single element.
- **Note:**
 - This is the difference between elements (fire, water, air, earth) and qualities (heat, cold, moist, dry).

Dean:

- I disagree. Since a quality is an accident (i.e. a non-essential property), it cannot exist on its own without a subject. Therefore, if a particular quality of an element is superior, the element itself to which that quality belongs must necessarily prevail.
- **Note:**
 - Since the elements create the qualities, when one quality is dominate, shouldn't it mean that element is dominate as well?
 - This assumes that each element has one quality.

Candidate:

- Although each element has two qualities, there is only one that is dominant. This is what gives the temperament its name – it is called “hot” or “cold” because heat or cold prevails over the opposing quality, with an equality of moisture and dryness. Similarly, it is called “moist” or “dry” because moisture or dryness is more powerful than the other, with an equality of heat and cold.
- **Note:**
 - Candidate asserts that each element has two qualities. Fire can be hot or dry for instance. But only one of these two qualities can be dominant. If the quality is dry, would we still say that the temperament is fire? No, we would say it was dry.

What is a Part?

Dean:

- That's enough of the Elements and Temperaments. What is a part?

Candidate:

- The term "part" in a broad sense refers to anything that makes up the whole human body. Galen notes that whatever completes and perfects the whole is considered a "part."
- [Hippocrates](#) used the term to include even bodily fluids and spirits.
- However, Fernelius more precisely defines a part as a body that coheres to the whole, is joined by shared life, and serves a specific use or function. By this definition, fluids and spirits would be excluded from the category of "parts" since they do not stay fixed but rather flow rapidly through the veins and arteries.
- **Note:**
 - Fernelius, may be a reference to Jean Fernel via his latinized name.

Dean:

- What are the main divisions of parts?

Candidate:

- The division of parts is complex, but the primary distinction is between containing parts and contained parts.

Dean:

- What are the containing parts?

Candidate:

- The containing parts are the solid structures that maintain their own form.

Dean:

- How are these classified?

Candidate:

- They are divided into Similar (homogeneous) and Dissimilar (heterogeneous) parts.

Dean:

- What are the similar parts?

Candidate:

- Similar (homogeneous) parts are those composed of a single, uniform substance throughout. They are the smallest visible units into which the body can be broken down. For this reason, they are sometimes called:
 - Simple or primary parts
 - Sensible elements (as they appear simple to our senses)

Dean:

- How are Similar parts categorized?

Candidate:

- They are divided into Spermatic (derived from seed/embryonic tissue) and Sanguine (derived from blood).

Dean:

- What are the Spermatic parts?

Candidate:

- Those that develop from embryonic tissue.

Dean:

- How many Similar Spermatic parts are there?

Candidate:

- Nine types:
 - Bones
 - Muscles
 - Ligaments
 - Fibers
 - Membranes
 - Nerves
 - Veins
 - Arteries
 - Skin
- **Note:** This is a debate about tissue classification and how early anatomists struggled with categorizing simple and complex tissues.

Dean:

- I argue that nerves, veins, arteries, and skin are actually heterogeneous (dissimilar) parts. Here's why, according to Galen, Hippocrates, and Plato in their work on body parts:
- Nerves have:

- A marrow-like interior
- A membranous exterior
- Veins and nerves are:
 - Interwoven with membranes
 - Contain various fibers
- Skin is composed of:
 - Nerves
 - Veins
 - Arteries
- Therefore, these structures should not be classified as homogeneous (similar) parts since they are clearly made up of different components.

Candidate:

- I argue, There are two categories of Similar (homogeneous) parts:
- Truly homogeneous parts:
 - Bones
 - Muscles
 - Ligaments
 - Fibers
 - Membranes
- Apparently homogeneous parts (appearing uniform to observation):
 - Nerves
 - Veins
 - Arteries
 - Skin

Dean:

- What are the Blood-derived parts?

Candidate:

- Those that develop from blood, namely:
 - Flesh
 - Fat

Dean:

- What are the Dissimilar (heterogeneous) parts?

Candidate:

- These are parts composed of several types of tissue. They are also called Organic parts because they serve as instruments through which mental faculties and bodily functions operate.

Dean:

- How are these Organic parts classified?

Candidate:

- They are divided into three main categories:
 - **Animal** (related to cognitive / nervous functions)
 - **Vital** (essential life functions)
 - **Natural** (basic biological functions)
- And within each of these categories, the parts are further subdivided into:
 - **Principal** (primary) organs
 - **Assistant** (supporting) organs
- **Note:** See: Spirits

Dean:

- What do you call the Animal, Vital, and Natural parts?

Candidate:

- These are the instruments responsible for the three types of functions.

Dean:

- What do you call the principle part?

Candidate:

- A principle part is one that governs other parts.

Dean:

- What are the assisting parts?

Candidate:

- Assisting parts are those that serve the Principle part and usually develop or are derived from them.

What Are The Organs?

Dean:

- What is the principle organ of Animal Function?

Candidate:

- The brain is the principle organ because it:
 - Is the source of all animal functions (cognitive/ neural activity)

- Houses the animal spirit (cognitive /neutral activity)
- Is the origin point of all the nerves.
- **Note:** This is an example of early recognition of the brain as having a central role in controlling bodily function via the nervous system. It is usually defined as 'animal spirit'.

Dean:

- How many types of organs assist the brain in carrying out Animal (neutral / cognitive) function?

Candidate:

- There are two types of organs that assist the brain in carrying out the Animal (neutral / cognitive) function.
 - **Conductive Organs:**
 - Transmit the brain's commands for sensation and movement.
 - **Note:** Nerves & Neural Pathways.
 - **Executive Organs:**
 - Perform the functions.
 - Sensory organs (perception)
 - Voluntary muscles (movement)
- **Note:** This roughly corresponds in modern times to nervous system pathways, sensory receptors, and motor effectors.

Dean:

- Which organs transmit the capacity for sensation and motion?

Candidate:

- The sensory and motor nerves.

Dean:

- What are the specific organs for each sense?

Candidate:

- Each sense has its dedicated organ:
 - **Eyes:** for vision
 - **Ears:** for hearing
 - **Nose:** for smell
 - **Tongue:** for taste
 - **Skin:** for touch
- **Note:** This is an early understanding in the differences between nerves that carry signals and organs that receive sensory input.

Dean:

- What are the specific organs for voluntary motion?

Candidate:

- The muscles.

Dean:

- What is the principle organ of the Vital Functions?
- **Note:** See: Vital Functions

Candidate:

- The heart, because it is:
 - The source of vital force and spirit.
 - The primary site of natural body heat.
 - The origin point of all arteries.

Dean:

- Which organs are subordinate to the heart?

Candidate:

- There are two types:
 - Organs of respiration.
 - Organs of circulation / pulse.

Dean:

- What are the organs of respiration?

Candidate:

- There are three types of organs of respiration:
 - Transmission:
 - Wind-pipe & rough Artery (transmit air)
 - Reception:
 - Lungs (receive & prepare air for the heart)
 - Motion:
 - 65 Muscles that expand and contract in the chest which are essential for breathing and expelling vapors.

Dean:

- What are Pulse instruments?

Candidate:

- The Arteries

Dean:

- What is the main Organ of Natural Functions?

Candidate:

- Liver (origin of natural faculty, veins, and blood generation)

Dean:

- How many types of organs support natural bodily functions?

Candidate:

- Two types; some are for nourishment and others are for generation (digestion & reproduction).

Dean:

- What are the Organs of nourishment?

Candidate:

- Preparation organs
- Purgation organs (Organs that remove the waste from the blood)
- Distribution organs (of nourishment)

Dean:

- What Organs are for preparation of Nourishment?

Candidate:

- Preparation organs
 - Mouth (Mastication)
 - Stomach (Digestion / Concoction)

Dean:

- What Organs are for Purgation?

Candidate:

- There are two types of purgation organs (Organs that remove the waste from the blood). Those that purge the Chylus (Chyle) and those that purge the Blood.
 - **Purges Chylus:**
 - Belly

- **Purges Blood:**
 - Spleen
 - Kidneys
 - Bladder
- The purgative organs of the Blood receive and separate the blood from those Humors which received the Chylus, creating Blood.
- **Note:** This describes the process where the stomach creates the Chyle and sends it to the spleen, kidneys, and bladder which then converts it into blood.

Dean:

- What Organ distributes Nourishment?

Candidate:

- The veins.

Dean:

- What are the Organs of Generation?

Candidate:

- Some are common to both Male and Female sexes.

Dean:

- Which ones are common to both?

Candidate:

- Testicles
- Spermatic vessels

Dean:

- Which ones are sex specific?

Candidate:

- Male: Penis.
- Female: Womb.

Of The Humors

Dean:

- Having covered the containing parts, what are the contained parts?

Candidate:

- The fluid parts that are supported by other structures – specifically, the Humors and Spirits.

Dean:

- How many Humors are contained in the Body?

Candidate:

- **Three Types:**
 - **Primogeneous** Humor (naturally occurring)
 - **Alimentary** Humor
 - **Excrementitious** Humor

Dean:

- What is the Primogeneous Humor?

Candidate:

- An oily substance originating in the body's solid parts, serving as the foundation for vital spirit and innate body heat and is called 'Radical Moisture'.

Dean:

- What do you call the Alimentary Humors?

Candidate:

- The juices from solid body parts, created by mixing the four classical elements.

Dean:

- What are Excrementitious Humors?

Candidate:

- Excess bodily moisture that serves a useful purpose for the body.

Dean:

- How are Alimentary Humors categorized?

Candidate:

- Into Primary and Secondary humors.

Dean:

- What are the Primary Humors?

Candidate:

- Those distributed by chyle through the liver's natural heat via veins to nourish body parts.

Dean:

- How many Primary Humors exist?

Candidate:

- Four:
 - Blood
 - Cholera (Yellow Bile)
 - Melancholy (Black Bile)
 - Phlegm
- These are mixed together in the veins, with blood being the predominant humor – hence called the “Sanguinary Mass” of which blood has the greatest quantity.

Of The Blood

Dean:

- Define ‘Blood’.

Candidate:

- ‘Blood’ can be defined in two ways. The first, refers to the entirety of blood volume in the body. The second, is more specific and refers to the more pure and vital component of it.

Dean:

- What is the nature of blood's composition (Temperature)?

Candidate:

- Blood, when considering the total blood volume, is considered well-balanced because it contains a proportionate mixture of different humors in harmony with each other. However, when looking at pure blood itself, it is characterized as pure and clear, hot and moist, somewhat similar to air in nature. It is not distinguished from the rest of the humors by temperature alone, but also by consistency, color, taste, and function.

Dean:

- What are blood's physical properties, and what is its function?

Candidate:

- Blood has a specific consistency so thin that, when functioning normally, it appears neither too thick nor too thin. It is red in color and sweet in taste. It primarily nourishes muscle tissue when it is in proper balance, and is associated with people who are muscular, energetic, attractive, good-natured, and cheerful.

Dean:

- At what ages is blood most dominant?

Candidate:

- Blood is most prevalent in children, adolescents, and young adults. According to Galen, boys, young men, and those in between these ages have the highest proportion of the sanguine humor, as their life force is still at its strongest.

Dean:

- When is blood most abundant in the body?

Candidate:

- According to Hippocrates, blood is most abundant during spring, when frost thaws and water flows freely.

Choler

Dean:

- What is Choler?

Candidate:

- Alimentary Choler is a thin component of the blood that behaves like a warming agent, it's Temperament is hot and dry. It appears pale to yellow in color and has a bitter taste. Those who possess an abundance of it tend to be slim, resilient, energetic, impulsive and hasty. It differs from excrementitious choler.

Dean:

- What is excrementitious Choler?

Candidate:

- Choler is sent to the Bladder (Gallbladder) to aid in digestion by helping move waste through the intestines and clearing away any mucus that adheres to the intestinal walls.

Dean:

- What type of person tends to produce more Choler?

Candidate:

- Cholera production peaks during young adulthood according to Galen.

Dean:

- When is Cholera production highest?

Candidate:

- It was believed that Cholera increased during summer and in dry weather conditions of the season of Air, as dryness was thought to increase Choleric qualities.

Melancholy

Dean:

- What is Melancholy?

Candidate:

- Melancholy was considered the denser component of blood, associated with Earth, believed to be cold and dry in nature, dark in color, and sour-tasting. People with high levels of Melancholy were thought to be serious, contemplative, stern, and steady. It was believed to nourish dense body tissues like bones.

Dean:

- What is the excrementitious Melancholy?

Candidate:

- The spleen was thought to filter this substance, separating useful components for nourishment from waste products. The filtered substance was believed to flow into the stomach to stimulate appetite and aid digestion. Strengthening the Faculty which retains meat during Concoction.

Dean:

- Who tends to have more Melancholy?

Candidate:

- It was believed to increase in older adults according to Galen.

Dean:

- When does Melancholy peak in the body?

Candidate:

- It was thought to be highest during autumn according to Hippocrates.

Phlegm

Dean:

- What is phlegm?

Candidate:

- Alimentary Phlegm was considered the more fluid component of blood, associated with Water, believed to be cold and moist, white in color, and either sweet or tasteless. People with high levels were thought to be lethargic, drowsy, heavy, pale, and soft. It was believed to nourish the brain and other cool, moist organs.

Dean:

- What is Excrementitious Phlegm?

Candidate:

- This refers to the watery waste that the kidneys filter from blood and send to the bladder through the ureters, what we now call urine.

Dean:

- At what age is phlegm most prevalent?

Candidate:

- It was thought to increase in old age due to declining "natural heat."

Dean:

- When does phlegm production peak in the body?

Candidate:

- Winter was believed to increase phlegm due to abundant rain and long nights. A moist Constitution of Air has a similar effect. Moisture in ambient Air, increases phlegmatic Humors and thus increases phlegm and water retention.

Secondary Humors

Dean:

- What are the secondary humors?

Candidate:

- These are humors that originate from the primary humors in various parts of the body, where they are refined through the final stage of concoction. This process produces two visible waste products – sweat and feces – along with invisible waste that leaves the body through perspiration.

Dean:

- How many secondary humors are there?

Candidate:

- There are four, classified according to how they change while being prepared to nourish different parts of the body.
- 1st: Fluid contained in the small veins, ready to flow into empty spaces.
- 2nd: Fluid that spreads through body tissues, penetrating them like dew.
- 3rd: Fluid that collects around and adheres to hair.
- 4th: Thick fluid that adheres to muscle fibers so thoroughly that it appears to transform into body tissue. Through these progressive changes, the humors eventually become part of the body itself.

Dean:

- Do you think the humors that make up the body's nature always remain in their natural state?

Candidate:

- No, they don't. When humors maintain their proper mixture and balance, they're natural. However, when they lose their balanced constitution, they become abnormal and deviate from their natural state. This explains why bodies are sometimes healthy and sometimes sick. As Hippocrates said, the body contains blood, phlegm, black and yellow bile – these constitute the body's nature and determine health or illness.
- Health exists when these humors are properly balanced in terms of Temperament, Quantity, and Quality, and in reference to mixture, when they are mixed and not separated from each other.
- The body becomes ill when these humors malfunction in three ways:
 - When the balance of Temperament is disturbed. Some become excessive while others become deficient.
 - When the Quality is imbalanced. When one of the Faculties becomes excessive while others become deficient.
 - When the mixture is compromised and one humor separates from the rest.
 - When a humor separates from the whole, it necessarily causes illness both in the area it left and where it accumulates abnormally. If this separated humor leaves the body, it causes a simple illness. If it remains inside, it causes a double illness – one from the depletion in the area it left, through evacuation, and another from excess where it accumulates.

Blood**Dean:**

- How does blood become unnatural?

Candidate:

- Blood becomes unnatural when it corrupts: its thinner portion turns into yellow bile and its thicker portion into black bile, making it overly rich in both Cholera and Melancholy. It can also be corrupted by other humors that flow into the veins from the gallbladder or other organs.

Cholera / Yellow Bile

Dean:

- How does bile deviate from its natural state?

Candidate:

- It can change its nature either inside or outside the blood vessels.

Dean:

- How many types of unnatural bile form in the blood vessels?

Candidate:

- Three types: pale, egg-yolk colored, and black.

Dean:

- What causes bile to become pale?

Candidate:

- It becomes pale when mixed with serous Humor.

Dean:

- How does it become egg-yolk colored?

Candidate:

- It's a combination of yellow and pale bile, where Acrimony of abnormal heat concentrates it, transforming it from a thin to thick substance. Its color intensifies until it resembles a raw egg yolk.

Melancholic / Black Bile

Dean:

- How does black bile become unnatural?

Candidate:

- Black bile forms from yolk-colored bile through extreme heat and burning.

Dean:

- How many types of unnatural bile form outside the blood vessels?

Candidate:

- Three types: leek-colored, rust-colored, and woad-colored (blue-green).
- **Note:** Woad is the dye and medicinal plant *Isatis tinctoria*. See: [A Modern Herbal](#)

Dean:

- What creates these types?

Candidate:

- They mainly form in the stomach from poorly digested foods like meat. Yolk-colored bile that enters the stomach often changes into one of these types due to the cold environment.

Dean:

- What causes melancholy to become unnatural?

Candidate:

- When melancholic humor is essentially burned by extreme heat, it becomes sharp and corrosive, differing from normal melancholic fluid like burned dregs differ from unburned ones. This is called black bile or black choleric humor.

Phelgmatic

Dean:

- What causes phlegm to become unnatural?

Candidate:

- It becomes unnatural when it's corrupted either inside or outside the blood vessels.

Dean:

- How many types of unnatural phlegm form in blood vessels?

Candidate:

- Two types: acidic and salty.

Dean:

- What is acidic phlegm?

Candidate:

- It's raw and unprocessed phlegm that has only undergone initial digestion in the stomach without further processing.

Dean:

- How does phlegm become salty?

Candidate:

- Sweet phlegm becomes salty when corrupted by mixing with the serous Humour.

Dean:

- How many types of phlegm form outside blood vessels?

Candidate:

- Four types: watery, mucous, glassy, and plaster-like.

Dean:

- What is watery phlegm?

Candidate:

- It's so thin it drips from the nose or flows down from the brain to the lower parts like water.

Dean:

- What is mucous phlegm?

Candidate:

- It's phlegm thickened by body heat into the consistency of mucus.

Dean:

- What is glassy phlegm?

Candidate:

- It resembles melted glass in color and consistency, being thicker and colder than mucous phlegm.

Dean:

- What is plaster-like phlegm?

Candidate:

- It becomes as thick and hard as plaster, sometimes found in joints after thinner fluids evaporate, leaving behind phlegm as hard as pumice stone.

Spirits**Dean:**

- Moving on from humors to spirits, why does Hippocrates call them “impulsive”?

Candidate:

- Because they enable living creatures to move, sense, live, and exist. Through them, the otherwise sluggish bodies of living things come under the soul’s control and authority. Moreover, they allow physical matter to connect with the non-physical, essentially serving as the bridge between soul and body.

Dean:

- What is the spirit?

Candidate:

- A spirit is an airy, thin, transparent substance that serves as the seat of natural heat, carries the body’s faculties, and is the primary instrument that activates bodily functions.

Dean:

- How many types of spirits are there?

Candidate:

- Two types: innate and infused.

Dean:

- What is the innate spirit?

Candidate:

- It’s the spirit that was embedded in various similar body parts during early development, with its foundation being the body’s Radical Moisture.

Dean:

- What is the infused spirit?

Candidate:

- It's the spirit that flows in from elsewhere, nourishing and maintaining the innate spirit, while carrying Faculty and Heat throughout the body to enable various functions.

Dean:

- How many types of infused spirit are there?

Candidate:

- Three types: animal, vital, and natural.

Dean:

- What is the animal spirit?

Candidate:

- It's a spirit generated in the brain's Ventricles from Vital Spirit and inhaled Air. When distributed through the motor and sensory nerves, it enables the body's parts to feel and move.

Dean:

- What is the vital spirit?

Candidate:

- It's produced in the left side of the heart from natural spirit and air taken in by the lungs. From there, it travels through the arteries to all parts of the body to sustain the innate Spirit, strengthen natural Heat, and restore energy.

Dean:

- What is natural heat?

Candidate:

- It's the heat that originates from the liver and spreads with blood through all veins, enabling generation, nourishment, and growth.

Faculties

Dean:

- Now that we've discussed both solid and fluid parts of human bodies, let's talk about the soul's faculties and functions. First, define what a soul is.

Candidate:

- A soul is the form of a living body. According to Aristotle, Entelechia, is the actualization of a natural, organic body potentially having life.

What is Entelechia?

Dean:

- What does Entelechia mean?

Candidate:

- Some interpret it as “achieving perfection,” while others see it as “the state of perfection.” I disagree with the latter, as the soul doesn’t cause action, it is the action itself. Life is what the soul does, not what the soul is.

What is the Soul?

Dean:

- Since we’re discussing human nature, explain what the human soul is.

Candidate:

- It’s what gives humans vegetal, sensual, and intellectual life. Aristotle defined it as the source of living, perceiving, and understanding. Others call it the primary cause of all bodily functions, equipped with multiple capabilities or Faculty.

Dean:

- What is a faculty?

Candidate:

- It’s the soul’s innate power to produce actions. Galen defined it as the cause of actions – it’s called a faculty because it has the power to act.

Dean:

- Why does Galen connect action to temperament?

Candidate:

- Because temperament enables the soul’s actions. Without proper temperament, the soul cannot act. As Galen wrote, the Soul works through balanced temperament of the Parts – they function best when properly balanced and poorly when imbalanced.

Dean:

- Does this mean the soul comes from temperament, or is it temperament itself?

Candidate:

- The soul isn't temperament – it's a substance, while temperament is an attribute. Faculty comes from both: the soul as the essential form and primary cause of all actions we perform, and temperament as the assisting cause that enables these actions.

What are the Faculties?

Dean:

- How many types of faculties are there?

Candidate:

- While the soul's essence is unified, however, physicians recognize three faculties: Animal, Vital, and Natural.

Dean:

- Since Nature gives different parts of the body different faculties for overall preservation, shouldn't there be as many faculties as Parts of the Body?

Candidate:

- Each body part has its own faculty to serve the whole through necessary actions. While the number of specific faculties matches body parts, they all fall under the three main categories: Animal, Vital, and Natural.

Animal Faculty

Dean:

- What is the Animal Faculty?

Candidate:

- It's the faculty unique to animals, hence its name.

Dean:

- How many types of Animal Faculty are there?

Candidate:

- Three: Principal, Perceiving, and Moving.

Dean:

- What's the Principal Faculty?

Candidate:

- It's exclusively located in the brain.

Dean:

- How many types?

Candidate:

- Galen identifies three: Imagination, Ratiocination, and Memory. Though some consider Understanding, unique to humans, as the only true Principal faculty.

Dean:

- What's Imagination?

Candidate:

- It receives and processes sensory images, combining them to create new concepts beyond direct sensory experience.

Dean:

- What's Ratiocination?

Candidate:

- The mind's ability to understand abstract and incorporeal concepts, forming universal principles from specific instances.

Dean:

- What's Memory?

Candidate:

- It stores and retrieves images presented by imagination for rational analysis.

Dean:

- Where are these Principal Faculties located in the brain?

Candidate:

- Arabs place imagination in front ventricles of the brain, reason in middle, memory in back. Greeks argue they're distributed throughout the brain.

Dean:

- Your thoughts on this debate?

Candidate:

- I disagree with the Arabian view, despite its plausible basis. While Avicenna and Averroes argue that mental faculties must have separate locations because one can fail while others remain intact, I see this differently.
- Consider these cases:
 - Theophilus hallucinated musicians but remained rational (impaired imagination)
 - A man obsessively asked passersby about throwing dishes (impaired reason)
 - During Greece's plague, people forgot their own families (impaired memory)
- These selective impairments stem from bodily conditions, not separate brain locations. The soul, being pure, expresses differently through varying physical states and structures. Like an instrument that plays differently based on its condition, the soul's faculties operate with varying effectiveness depending on bodily temperament.
- We see natural variations in mental abilities – some excel in imagination but have poor memory, others have strong memory but weak reasoning, and some show good judgment despite limited imagination and memory.
- When illness strikes, stronger faculties resist damage while weaker ones fail more easily. Just as digestive functions (attraction, retention, etc.) can share one location while being independently affected, mental faculties can occupy the same brain regions.
- The Arabians argue that imagination resides in the soft frontal brain (suited for receiving ideas) and memory in the harder posterior region (better for retention). While I disagree with this separation, I acknowledge that frontal regions process information more quickly but less thoroughly than posterior regions. Overall brain condition matters too – dry brains favor memory, moist ones imagination, and balanced ones judgment.
- Arabian followers cite Galen to argue for hierarchical brain regions housing nobler faculties. However, Galen preferred the posterior ventricle not as memory's location, but because mental processes become more refined as they move from front to back, where the "animal spirit" reaches its peak development.
- They also claim Galen treated disordered imagination by applying remedies to the forehead, but this was due to practical anatomy – the thin skull and coronal suture allow better medicine penetration – not because faculties have specific locations. He used similar treatments for various brain conditions.

Dean:

- Excellent refutation of the Arabian theory about faculty locations. What's the sensible faculty?

Candidate:

- It transmits sensation from brain to body through nerves.

Assistant Faculties (Senses)**Dean:**

- What is sense?

Candidate:

- While sometimes meaning the act of feeling, it's properly a faculty that perceives sensory information through animal spirits and sense organs.

Dean:

- How many types of senses are there?

Candidate:

- There are two categories: Internal and External senses.

Dean:

- What is the Internal sense?

Candidate:

- The Internal sense distinguishes the Objects of the Exterior senses.
- The Internal sense, traditionally called "Common Sense," integrates and processes information from all the External senses. It's located in the brain, where nerve pathways from all sensory organs converge.
- This allows the brain to:
 - Combine and interpret different types of sensory information
 - Coordinate sensory processing
 - Make sense of our overall sensory experience
 - **Note:** The original uses a description of King and Judge having the Seat in the Body and Brain where he rules and processes this information via 'Administring senses' and 'Actions'.
- Galen understood the Imagination to be under common Sense.
 - **Note:** What Galen historically included under "common sense" would today be understood as various cognitive processes including sensory integration and aspects of perception.

Dean:

- How many External senses are there?

Candidate:

- There are five primary External senses:
 - Vision (sight)
 - Audition (hearing)
 - Olfaction (smell)
 - Gustation (taste)
 - Somatosensation (touch)

Dean:

- What is Vision?

Candidate:

- Vision is the sense processed by the eyes, Vision is the sense processed by the eyes, which is used to perceive (*colors, shapes, movement, and depth*) through transparent media like air.

Dean:

- What is Hearing?

Candidate:

- Hearing is the sense processed by the ears, which detect and interpret sound.

Dean:

- What is Smell?

Candidate:

- Smell is the sense processed by olfactory receptors in the nose, (*which detect and interpret airborne chemical compounds*).

Dean:

- What is Taste?

Candidate:

- Taste is the sense processed by the tongue, which detects the tastes of things (*detect and interpret chemical compounds in food and beverages to distinguish different flavors*).

Dean:

- What is Touch?

Candidate:

- Touch is a complex sense distributed throughout the body via the nervous system. It processes various physical sensations including:
 - Temperature (hot/cold)
 - Pressure
 - Texture (rough/smooth)
 - Pain
 - Position and movement of body parts (proprioception)

Dean:

- What is the moving (motor system) Faculty?

Candidate:

- The motion system controls bodily movement via the Muscles and the command of the Will.
 - **Note:**The motor system controls bodily movement through:
 - Voluntary muscle control via motor neurons
 - Coordination between the brain, spinal cord, and muscles
 - Both conscious and unconscious movement regulation

Vital Faculty (System)

Dean:

- What is the vital system?

Candidate:

- It originates in the Heart and spreads through the Arteries to preserve life.

Dean:

- What is Life?

Candidate:

- Life is a continuance of Natural Heat and Death is the extinction of the Vital Heat. Aristotle defined life as, the continuance of the Vegetable Soul in the Body or Energy of the Body. Others have described it as a Union between the Soul and Body. When the Soul is separated from the Body, there is Death or Corruption.

Dean:

- How many Faculties (*components*) are under the Vital Faculty?

Candidate:

- The vital system has two primary functions:
 - Respiration: Inhalation & Exhalation.
 - Circulation: The rhythmic beating of the heart via Dilation and Contraction (*blood flow through the vessels*).

Dean:

- If emotion was placed in the Heart by the Philosophers, does it belong to the Vital?

Candidate:

- The emotional and motivational systems help organisms pursue beneficial stimuli and avoid harmful ones (*Concupiscible Faculty*). This is also known as the Vital Faculty.

Dean:

- Galen and Hippocrates assign the emotions (*Irascible Faculty*) to the Heart and the (*Concupiscible Faculty*) to the Liver.

Candidate:

- Galen makes an important distinction here – he’s not talking about conscious desire or cravings, but rather about the body’s natural metabolic needs. While he attributed this function to the liver, we now understand these processes differently.

Natural Faculty

Dean:

- What is the Natural Faculty (*metabolic system*)?

Candidate:

- Nutrients are transported from the Liver through the Veins to nourish the entire body.

Dean:

- What are the main biological systems involved?

Candidate:

- Three; Metabolism, Growth, & Reproduction (*of new cells etc.*).

Nourishing Faculty

Dean:

- What is the Nourishing Faculty (*Nutritional System*)?

Candidate:

- It’s the body’s system for converting food into usable nutrients and energy. This process maintains and repairs tissues throughout life through metabolism and cellular regeneration.

Dean:

- How many Faculties are under the Nourishing Faculty?

Candidate:

- Four; Absorption, Storage, Metabolism, Elimination.

Dean:

- What is Absorption (*Attractive*)?

Candidate:

- That which draws together all Moisture.
- **Note:** The digestive system breaks down food and absorbs nutrients through specialized cells in the intestines.

Dean:

- What is Storage (*Rententive*)?

Candidate:

- That which is retained from the Attracted Nourishment until altered (*Altering Faculty*)(*Metabolism*) have changed it.
- **Note:** The body stores nutrients in various forms – like glycogen for carbohydrates and fat tissue for lipids – until they're needed for energy or tissue repair.

Dean:

- What is the Concoctive Faculty (Metabolism)?

Candidate:

- That which alters retained Nourishment and assimilates it for Nourishment.
- **Note:** Metabolism is the process of converting stored nutrients into forms that cells can use for energy and building new tissues.

Dean:

- What is the Expulsive Faculty (*Elimination*)?

Candidate:

- That which divides Nourishment from what isn't and expels it.
- **Note:** It's the body's process of removing waste products and unused materials through various systems including the digestive, urinary, and respiratory systems.

Other Faculties

Dean:

- What is the Growth (Increasing) Faculty?

Candidate:

- The biological function that controls bodily growth and development until maturity, as determined by natural processes.

Dean:

- What is the Reproductive (Generative) Faculty?

Candidate:

- The biological function that enables reproduction of one's own kind. This consists of two distinct processes (Faculties).

Dean:

- What are they?

Candidate:

- The Transformation (Changing Faculty) and Formation (Forming Faculty) processes.

Dean:

- What is the Transformation Faculty?

Candidate:

- The process that transforms the initial reproductive material into the appropriate matter needed for reproduction and development.

Dean:

- What is the Formation Faculty?

Candidate:

- The process that shapes and develops the body's form.

Dean:

- We've discussed the Animal, Vital, and Natural Faculties. Do they work together?

Candidate:

- According to Fernelius, these systems are interconnected and interdependent. The Vital system energizes the others and coordinates their functions, while receiving support from them in return. The Natural system provides nutrients, while the Animal system, through breathing and chest

movements, enables nutrition and temperature regulation.

- The Animal system receives materials from the other two, while the Vital system, working through the arteries, maintains and enhances it. The Animal system constantly requires support from the Vital system.

Dean:

- What is the accepted hierarchy of the Faculties?

Candidate:

- In terms of development, the Natural system develops first, followed by the Vital, then the Animal system. In terms of complexity, the Animal system is most sophisticated, followed by the Vital, then the Natural system. However, for sustaining life, the Vital system is most crucial, followed by the Natural, then the Animal system.

Actions

Dean:

- After discussing these faculties, let's discuss Actions. What is an Action?

Candidate:

- An Action is a movement or function arising from a Faculty. It's sometimes called Energy in Greek, or Function/Operation in Latin.

Dean:

- How are Functions categorized?

Candidate:

- Like Faculties, Functions are categorized as Animal, Vital, and Natural.

Dean:

- But doesn't Galen only recognize two types of Functions – Animal and Natural?

Candidate:

- Yes, but in that context, Galen included Vital functions within the category of Animal functions.

Dean:

- How do Intellectual functions differ from Sensory functions?

Candidate:

- The key difference is that Sensory functions each have specific physical organs: vision uses eyes,

hearing uses ears, smell uses the nose, taste uses the tongue, and touch uses the skin. In contrast, Intellectual functions don't require specific physical organs because they are not capable of Corporeality.

Dean:

- But isn't the brain the organ responsible for mental functions? After all, its condition is essential for understanding, thinking, and reasoning – when it's impaired, psychosis (Phrensie) can result.

Candidate:

- While the brain is indeed the organ of perception (imagination) and processes sensory information, higher cognitive functions are more complex. The brain handles physical sensory processing, but abstract thinking and consciousness involve more than just physical processes.

Dean:

- How are voluntary actions categorized?

Candidate:

- They fall into two categories: those that are completely under voluntary control, and those that are partially controlled by bodily needs and reflexes.

Dean:

- Which actions are completely voluntary?

Candidate:

- These are actions we can perform at will, without impediment, such as speaking and walking (assuming normal physical function).

Dean:

- Which actions are influenced by bodily needs?

Candidate:

- These are actions that respond to physiological needs rather than pure voluntary control, such as urination and defecation.

Dean:

- How are vital functions classified?

Candidate:

- Vital functions include one primary function – the maintenance of life-sustaining processes (Vital Spirit) – and two supporting functions (two Ministerial): respiration and circulation (pulse). The

circulatory system (Pulsatii Actions) is also influenced by emotional states (Motions of the Heart via irascible & cupscible Faculties): positive emotions like joy, hope, and love can increase heart rate and blood flow, while negative emotions like sadness, fear, and anxiety can cause cardiovascular constriction and stress (evil Object).

Dean:

- Is breathing a voluntary (Animal) or involuntary (Natural Action) function?

Candidate:

- Breathing is a semi-voluntary function – while we can consciously control it using our respiratory muscles to expand and contract the chest, it's not entirely under voluntary control since it's necessary for survival. Some consider it a hybrid function: it's partly voluntary in terms of the muscular control we can exert, and partly involuntary as it's linked to automatic cardiac function and continues during sleep when voluntary actions cease. This automatic regulation ensures continuous respiration even when we're unconscious and Animal Actions cease.

Dean:

- Is the heartbeat voluntary (Animal) or involuntary (Natural Motion)?

Candidate:

- The heartbeat doesn't depend on conscious will or simple biological processes alone. We cannot consciously start, stop, or control our heartbeat. The cardiovascular system is regulated by complex neurological and biochemical mechanisms that maintain life functions. This system coordinates with other vital processes including digestion and metabolism to sustain bodily functions. Therefore, the pulse represents an involuntary, vital function of the heart. it's not under voluntary control but is essential for life.

Dean:

- What are the main actions of the Natural Faculty?

Candidate:

- The primary biological functions are nutrition (metabolism)(Nutritive), growth (Increasing), and reproduction (Generative) Faculties.

Dean:

- What is nutrition?

Candidate:

- Nutrition is the process by which the body converts consumed food into substances used for building, maintaining, and repairing body tissues.

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