

CVE105 SUMMARY

CHAPTER 1

1. The **interpretation of observations** leads to **KNOWLEDGE**
2. **PHILOSOPHY** is the **love of wisdom**
3. **PHILOSOPHY** is the **RATIONAL and CRITICAL INQUIRY** into basic principles
4. **METAPHYSICS** is the investigation of ultimate reality
5. **EPISTEMOLOGY** is the study of origins, validity and limits of knowledge
6. **ETHICS** is the study of **morality and the good**
7. **AESTHETICS** is the study of **nature of BEAUTY and ART**
8. **ANALYTIC and SYNTHETIC Philosophy** are the **types** of philosophical inquiry.
9. **ANALYTIC PHILOSOPHY** is the logical study of concepts
10. **SYNTHETIC PHILOSOPHY** is the arrangement of concepts in a unified system.
11. **PHILOSOPHY** meant the pursuit of knowledge for its own sake
12. **PHILOSOPHY** is the desire to find out what is **REAL and TRUE**
13. Philosophy is a **kind of CALLING or VOCATION**
14. **Philosophy of Science** is investigation into the general nature of scientific practice
15. **PHILOSOPHY** is a set of beliefs or attitude to life that guides somebody's behavior
16. The composition of the universe is **MATTER and ENERGY**
17. **MATTER and ENERGY** are inseparably related.
18. **ETYMOLOGICALLY** means **"from its origin"**
19. The key word for **philosophy** is **WISDOM**
20. The key word for **science** is **KNOWLEDGE**
21. **PHILOSOPHY** can be defined as a kind of calling to anyone who wishes to take life **reflectively** and **thoughtfully**
22. **Science** is driven by **CURIOSITY and SPECULATION** about the natural world
23. **SCIENCE** is knowledge gained from the study of the behavior of nature
24. **SCIENCE** is the study of the universe, matter and life
25. **TECHNOLOGY** involves creating, improving artefacts and systems to satisfy human wants.
26. **HISTORIANS** examine **primary sources**
27. **HISTORY** is an effort to reconstruct the past to discover what people thought, what they did, and how their beliefs and actions continue to influence human life
28. **GALILEO GALILEI** is the father of modern science
29. Historians **interpret** the primary source evidence
30. Every generation of historians **"rewrites"** the past
31. **HISTORY** is branch of knowledge dealing with events and people
32. **ARCHIMEDES** is the father of Mathematics

CHAPTER 2

1. It is a capital mistake to **THEORIZE** before one has data – **Sir Arthur Conan Doyle**
2. It's a good morning exercise for a research scientist to discard a pet hypothesis every day before breakfast. It keeps him young – **Konrad Lorenz**
3. If they don't depend on true evidence, scientists are no better than gossips – **Penelope Fitzgerald**
4. Science is defined in terms of either **knowledge or method**
5. **Scientific Knowledge** is the total body of factual material, which has been accumulated relating to events of the material world.
6. **Scientific investigation** may begin in response to **OBSERVATIONS** made by scientists or in response to some **INTERNAL INDUCTIVE PROCESS** on the part of scientists
7. Contemporary philosopher of science **KARL POPPER** has stated, **be capable of REFUTATION**
8. Knowledge which cannot be investigated is described as **METAPHYSICAL**
9. **FACTS** are based on **OBSERVATIONS**
10. The word data originated from the latin word **DATUM** meaning **something given**
11. Observations may be **qualitative** or **quantitative**
12. A particular natural event is called a **PHENOMENON**
13. **INSTRUMENTS** acts as extension of our senses in scientific observation
14. All facts related to a particular problem are called **DATA**
15. **Hypothesis** is also known as **INTELLIGENT GUESS**
16. Scientists who formulate hypothesis state formally what they **PREDICT** will be the outcome of a given experiment before beginning the **RESEARCH**
17. **A SCIENTIFIC THEORY** is a theory whose weight of evidence seems to indicate that its hypothesis is sound
18. The equation of scientific progress: **Careful observation + Persistent search for truth + Intelligent thought = PROGRESS**
19. An **experiment** is a part of the **process of science**
20. The four parts of an experiment are **Problem, Procedure, Observation, Conclusion**
21. An important feature of an experiment is the **CONTROL**
22. A Scientific theory must be '**rational**'
23. A Scientific theory must be '**relevant**'
24. A Scientific theory must be '**extensible**'
25. **A scientific theory** that remains unchanged for many years may be accepted as a **scientific law**
26. Problems associated with the scientific method are **Inadequate Evidence, Preconceptions, Prejudices/Bias**
27. It is significant that the attitude of scientist is that no theory or law represents **Absolute truth**
28. Five major **metascience** disciplines are **Psychology, Philosophy, History, Economics, Politics**
29. **Prejudices** are negative opinions formed before an investigation without evidence, knowledge, thought or reason.

30. No process is possible in which the sole result is the absorption of heat and its complete conversion into work (law of **ENTROPY**)
31. A **diffusing** substance moves from where its concentration is larger to where its concentration is smaller at a **rate** that is proportional to the **spatial** gradient of concentration (Fick's First law of Diffusion)
32. The end product of science is **Scientific Law**
33. The end product of Technology is **Invention**
34. **Scientific Method** is a step by step method that is used to find **answers** to questions about the world around us.

CHAPTER 3

1. **Bare hands** were man's first tools
2. The agricultural discovery brought **about rough division of labour** where man does the heavier task while the wife and the children do the lighter domestic tasks.
3. The polished stone tools period of the Stone Age is known as **NEOLITHIC**
4. **FLINT** is the primary material for tool-making in the Stone Age.
5. **ADZES** are used for shaping wood during the late Stone Age
6. **SICKLE** are used for harvesting during the late Stone Age
7. In Europe, Bronze Age spans the period from **about 2000 to 700 BC**
8. **Bronze** is an alloy of **tin** and **copper**
9. **PLATO** is the father of philosophy
10. The major advantage of iron over bronze was that **the ores** from which it could be obtained were **widely available** and hence inexpensive when compared to bronze
11. The great **invention** of the 19th century was the **RAILWAY**
12. **Henry Bessemer** developed a new process in the **year 1855** for converting **Crude Iron** to **Steel**
13. In the year **1760**, **James Watt** designed the modern steam engine, paving way for the **industrial revolution**
14. **The Russian Sputnik1** was the first artificial satellite put into orbit around the earth
15. **The moon core sample** was collected in the year **1970**
16. Space exploration has led to the launching of better **metereological** and **communication satellite** in our orbit and space
17. The disastrous effect of **Chernobyl nuclear** power plant in the then USSR, in the year 1986 which led to the maiming of many people, exemplified the **negative** aspect of **nuclear energy** utilization
18. **On 20th July, 1969**, **U.S Astronauts Neil A. Armstrong and Edwin E. Aldrin** of the Apollo 11 lunar module became the first humans to set foot on the moon
19. **In 1961**, **Soviet Cosmonaut Yuri A. Gagarin and American Astronaut Alan B. Shephard Jr.** manned the first space vehicle on 12th April and 5th May respectively.
20. **In October 1958**, **NASA** (National Aeronautics and Space Administration) was created in the **United States**

21. About the year **3000BC** the **ABACUS** the first computing instrument for exclusive general calculation was developed
22. **Networks** are interconnected to form the internet, through the internet, information, **product** and services of various technologies are shared worldwide with much better efficacy
23. **Wilhelm Rontgen** is the German Scientist famous for his discovery of **X-rays**
24. **Benjamin Franklin(1706-1790)** and **Michael Faraday (1791-1867)** did much of the pioneering work in electricity

CHAPTER 4

1. **ARTEFACT** is an object made by a human being, especially one that has archeological or cultural interest. Most of these are Stone tools
2. The most recent period in the geological time scale (10,000 years ago) is known as **HOLOCENE** period.
3. The major life forms developing from the Jurassic periods is **BIRDS**
4. **The Cambrian period** in the geological time scale is approximately **545million years ago**
5. The latest period in the geological time scale is **approximately 4.65Billion years ago**
6. **BIPEDALISM** seems to be the earliest of the major hominine characteristics to have evolved
7. **Some fossils remains** have been found in the sediments of the **Olduvai Gorge**
8. The existence of **artefacts** such as stone tools pottery and fire hearths, provides us with insights into ways in which modern humans have developed
9. The brain capacity of the genus **Australopithecus** is **450cm³**
10. The brain capacity of the genus **Homo Habilis** is **800cm³**
11. The brain capacity of the genus **Homo Sapiens** is **1200cm³**
12. The genus '**Homo erectus**' in human phylogeny has **Omnivorous Diet**
13. **Culture** cannot be transmitted by **Genetic Inheritance**
14. **PALAEONTOLOGY** is the study of fossils, the earth science that studies fossil organisms and related remains
15. **HOMINISATION** is the process of becoming human
16. **Europe** is not a famous location of *hominid fossils*
17. **PHYLOGENY** is the sequence of events involved in the evolutionary development of a species or taxonomic group of organisms
18. **PANSPERMIA** is a theory of life that states that the universe is full of spores that germinate when they find a favourable environment
19. **NEANDERTHALS** are Pre-historic Human skulls, they lived in **Europe** and **North Africa** between **100,000 and 30,000BC**.
20. **STEADY-STATE** is a theory in astronomy that the universe has always existed at a uniform density that is maintained because new matter is created continuously as the universe expands.

21. Humans share many aspects of behavior with other primates and non-primates but there are some which are unique to humans and these include **ARTS, RELIGION** and **FREE-WILL**.

CHAPTER 5

1. **Biosphere** is the totality of its living inhabitants
2. Normal atmospheric pressure at sea level is **760torr or 760mmHg**
3. **Atmosphere** consists of layers of gases that support life and provide protection from harmful radiation.
4. Ozone is a form of oxygen with **three atoms** in each molecule
5. Chemicals such as **chlorofluorocarbons (CFCs) or Chlorofluoromethanes** were rising into the atmosphere in large quantities because of their **use as refrigerants and propellants in aerosol dispensers**
6. **Lithosphere** is the soil mantle that wraps up the core of the earth
7. About 80% of **methane gas** is produced by decomposition in rice paddies, swamps and the intestines of grazing animals and by tropical termites
8. The **three** major fossil fuels are **Coal, Oil, and Gas**
9. The **two major sources** of greenhouse gases are **Carbon dioxide and Water vapour**
10. Many scientists have predicted **2° to 6°C** rise in **global temperature** by the **Mid-21st Century**
11. **CFC** is an acronym for **chlorofluorocarbon**
12. **Greenhouse effect** refers to the way in which gases in the earth atmosphere warm the earth by increasing the retention of sun energy
13. **Extensive use of synthetic pesticides** derived from **Chlorinated hydrocarbons** in pest control has had disastrous environmental side effects
14. **Chemical pollution** entering rivers and streams comes from two major sources: **Point pollution** and **Non-Point pollution**
15. **Gully erosion formation** can be greatly accelerated by human activities such as **Poor Agricultural practices**
16. The amount of **carbon dioxide** has been increasing over the years **by 0.4% a year** 17. DDT means **dichlorodiphenyltrichloroethane** which is an **insecticide**.

NOTE THE FOLLOWING BELOW:

1. Ensure you know the parts of a Steam engine
2. Take note of the brain sizes of the organisms in Chapter four
3. Eat well, Sleep well and Read well....

Then you have your **A** in CVE105 *soft*

LEKKE!⁸