

day/date

Insufficient length

Insufficient headings

No diagrams

Work on math portion

Improve paper presentation

Mock Exam Css - 2025

May - 08 - 2024

Preparatory Section
Batch: 59 (online)

General Science & Ability

Part - II

Section - I

Question # 02

(a) Differentiate climate and Environment.
What are cause of air pollution in Pakistan?

Ans: Climate refers to the long-term atmospheric conditions in a specific region, while environment encompasses all air, water, soil, and living organisms. The cause of air pollution in Pakistan include industrial emissions, vehicle emissions, natural cause like dust storms, and agricultural burning.

(b) Write a note on vitamins and their role in human body?

Ans: vitamins are essential nutrients that play a crucial role in human health. They are divided into two categories: Fat-soluble (A, D, E and K) and water-soluble (B and C). Vitamins are important for energy production, immune function, growth and development.

day/date

c. Compare goal of Cop-27 and Cop-28 on climate change?

Ans: Cop-27 and Cop-28 are conferences focused on addressing climate change. Cop-27 emphasized the need for urgent action, while Cop-28 aims to accelerate global efforts and implement solutions. The global goal is to limit global warming to 1.5°C and achieve net-zero emissions by 2050.

d. What are Active and passive sensors? How these are used in GIS?

Ans: Active sensors emit energy to collect data, while passive sensors detect existing energy. In GIS, active sensors like LiDAR and radar are used for topographic mapping and land cover classification. Passive sensors like satellite imagery are used for land use classification and change detection.

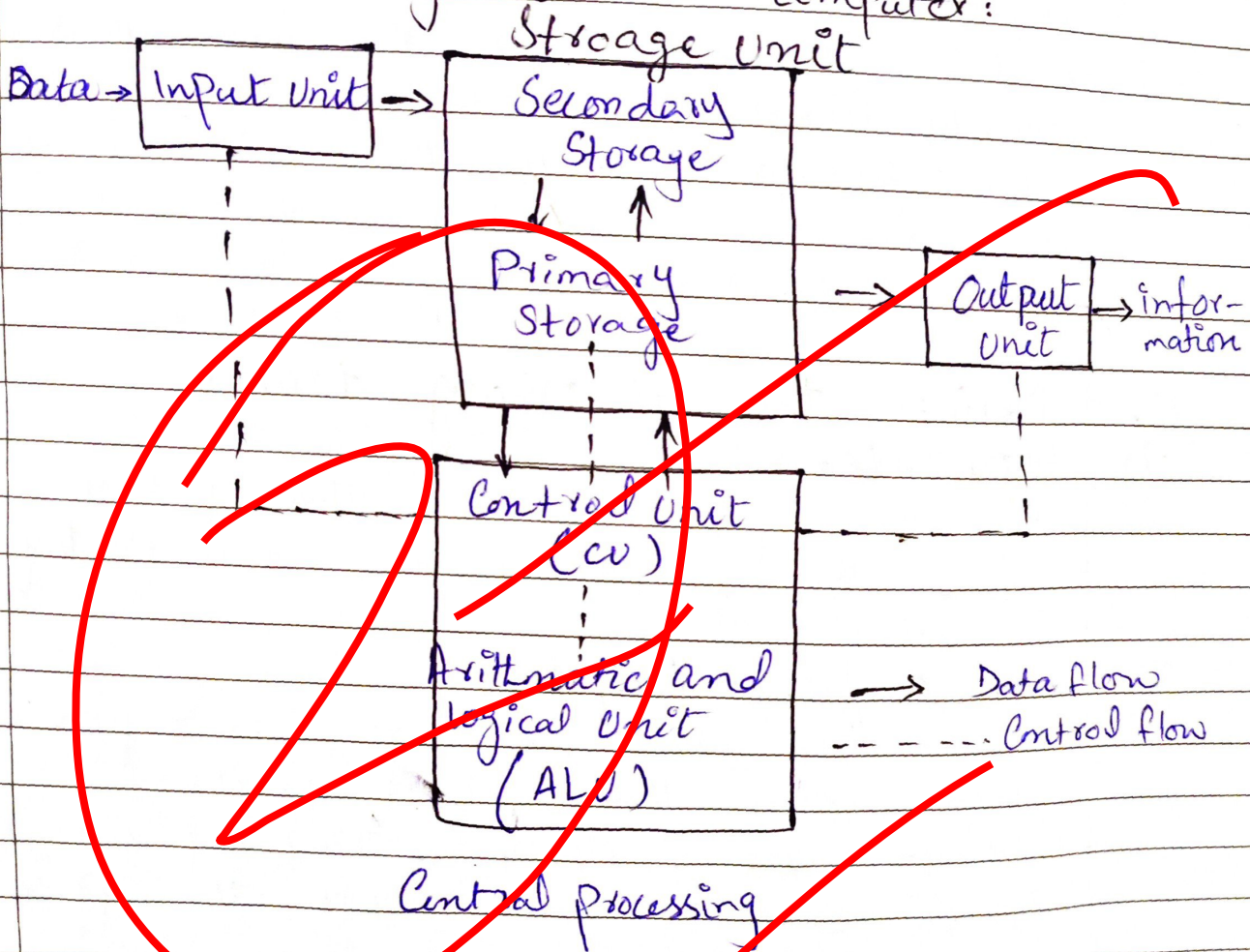
Question # 03 :-

(a) What are buses? Discuss their types in computer. Also draw block diagram of input and output devices of computer?

Ans: Buses in computers are communication pathways that allow data and instructions to be transmitted between different

Components of a Computer System.
There are several types of buses, and including address buses, data buses, and control buses.

Block Diagram of a Computer:



A block diagram of input and output device in a computer would include they keyboard, mouse, and other input devices Computer to the Central processing unit (CPU), which processes the data and sends it to output devices such as the monitor, printer, and speakers.

B. Define optics. How does an optical fiber work?

Ans: Optics is the branch of physics that deals with the behavior and properties of light, including its interactions with matter. Optical fibers are thin glass or plastic fibers that transmit data as light pulses through the fiber, which is received at the other end and converted back into digital data.

C. Define the following term.

(i) Hypocenter :-

The hypocenter is the point within the Earth where an earthquake occurs.

(ii) Annular Lunar Eclipse :-

An annular lunar eclipse occurs when the Moon passes through the Earth's annulus (ring of light), causing the moon to appear as a ring of light in the sky.

(iii) Epicenter :-

The epicenter is the point on the Earth's surface directly above the hypocenter of an earthquake.

(iv) Magma :-

Magma is molten rock beneath the Earth's surface.

(v) Dark Matter :-

Dark matter is a hypothetical form of matter that is thought to make up approximately 27% of the universe, yet it is invisible and has not been directly detected.

d. Differentiate Big Bang and Big Crunch.

How age of the universe is measured?

Ans: The big bang theory suggest that the universe began as a singularity and expanded rapidly around 13.8 billion years ago. While the Big Bang Crunch theory suggest that the universe will eventually collapse back into a singularity. The age of the universe is measured by observing the cosmic microwave background radiation, the abundance of light elements, and the properties of globular clusters and other celestial objects.

Section # 02

Question # 6

(a)

Radius of cylinder is 8cm and height is 15cm. Find the volume?

Solution:

$$V = \pi r^2 h$$

$$V = (3.14) (8)^2 (15)$$

$$V = (3.14) (64) (15)$$

$$V = 3,014.4 \text{ cm}^3$$

$$\text{Volume} = 3,014.4 \text{ cm}^3 \text{ Ans}$$

B. Al Aqsa mosque in Jerusalem, Israel has a dome of rock in regular Octagonal shape. What will be the angle of each side?

Ans: An Octagonal is a polygon with 8 sides. The sum of the interior angles of an Octagon is 1080 degrees. Since Al Aqsa mosque's dome is a regular Octagonal, all sides are equal, and we can divide the sum of the interior angles by 8 to find the measure of each angle:

$$1080 \text{ degrees} \div 8 = 135 \text{ degrees}$$

d. A ladder is leaning against the side of a 10^m tall house. If the base of the ladder 3m away from the house how tall the ladder?

height of house = 10m
Base of house = 3m

formula = $a^2 + b^2 + c^2$

$$a^2 = 3^2 + 10^2$$

$$a^2 = 100 + 9$$

$$a^2 = 109 = a = 109^2$$

$$a = 10.44 \text{ Ans}$$

