symptoms of fat soluble vitamins.

Q. No. 4.	**(A)**	What is a mirage? Describe in detail the creation of mirage.	**(5)**
	(B)	Differentiate between the occurrence of Lunar and Solar Eclipse?	**(5)**
	(C)	Briefly explain what effects are produced due to Rotation & Revolution of Earth?	**(5)**
	(D)	Most of the household appliances utilize 'DC' then why we generate 'AC' at power stations?	**(5)**
Q. No. 5.	**(A)**	Differentiate between RAM and ROM.	**(5)**

8.4 (a)

Definition :

Mirage is a type of optical illusion that often occurs on hot region or very cold region. It is fake pictorial view of something that not even exist. It summers, it shows a river in very harsh heat from a certain distance

How mirage is created?

1. Temperature radiant and refraction of light.

As the matter of physics, light travels very fast in vacum, than in water or glass. That is due to density of objects and their refractive index.

In same manner, principle applies on winds too. Thus light travels faster and straight in

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words that are more dense than the words that are less dense.

2. Different refractive Indices of words.

As generally, in summers words above the earth's surface are hotter and less dense than air in upper layers of atmosphere.

Thus, when sunlight enter to words above earth surface, it turn its trajectory a bit and steer towards different direction.

3. Optical Illusion created by refraction

When word is hotter above earth surface and sunlight enters it from the words of cold words, it refracts due to the principle of refraction of light and turns towards the human eye, making him see an reflection of sky.

Effects of mirage :

1) Psychological deception

As it makes one believe, that there exist a river or lake. In summer, in deserts it deceives many people.

B) Definition :

Lunar and Solare eclipse are metaphysical phenomenas occurring at different location, due to different reasons and scientific backings.

How they differ ?

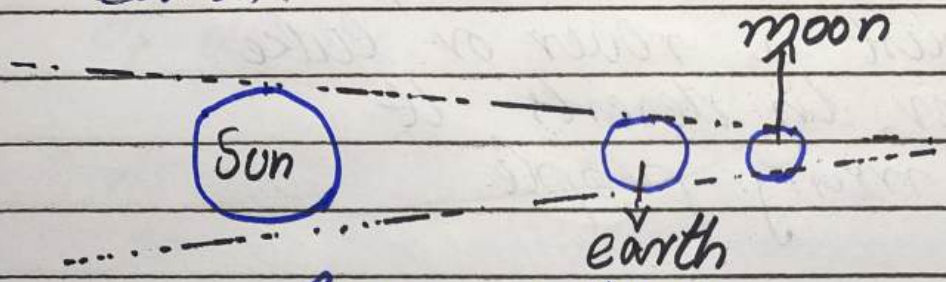
1) Science behind formation

- **Lunar eclipse**

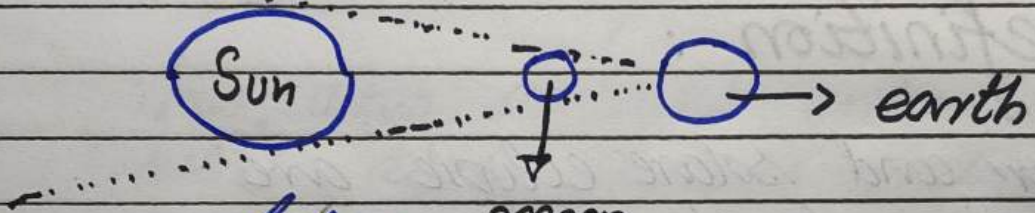
  It is a phenomena that it originally a shadow of earth on moon.

- Solar eclipse

It occurs when moon is between earth and sun, leaving a casting shadow of moon on earth.



∴ lunar eclipse



∴ Solar eclipse

2) Phase of moon

- Solar eclipse

It normally occurs during new moon when the mon is directly between earth and sun.

- Lunar eclipse

It normally occurs during full moon.

3) Types and Visibility

- Solar eclipse

There are three types of solar eclipse as total partial and annual. It is visible in day time for few mins

- **Lunar eclipse**

There are also three types partial total and penumbral. It is visible to every location on earth — not like solar that is to specific locations. Moreover, it may last for few hours.

4) Frequency of occurrence

- **Solar eclipse**

It occurs normally roughly around every 18 months.

- **Lunar eclipse**

It occurs around twice a year.

5) Safety of viewing

- **Solar eclipse**

It cannot be looked with naked eye.

- **Lunar eclipse**

It is safe to view with a naked eye

C) Definition :

Revolution of earth and rotation of earth are naturally phenomena that are occurring in universe.

Rotation means movement of earth from west to east on its axis.

Revolution means movement of earth around the sun being on its axis.

What are effects produced by rotation and revolution

1) Effect of rotation

a) Cycle of day and night

Earth rotation moves the western side, at a time, away from the sun, causing night on western countries and day

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In eastern countries — region.

b) Time-zones

Time zones are created due to rotation. There are 24 time zones each differ at one hour.

c) Tidal effects

Earth's rotation influence tidal effects, altering its patterns creating high and low tides.

d) Coriolis effect

It is path of moving air and water. It is normally deflected to right in northern hemisphere and to left in southern.

e) Bulging at equator

Due to centrifugal force, earth has bulged at centre.

2) Effect of revolution

a) Seasons

At every 23.5° angle movement, seasons are change differently on different regions.

b) Variation in day Lengths

A matter of revolution of earth, days are longer in winter summers and shorter in winters.

c) Constellation changes

As earth moves around sun, it allow different seasonal star patterns.

D) Definition

AC and DC are types of currents that are normally used in electric realms.

They both differ as per their characteristics.

AC : Alternat current

DC : Direct current

Why AC is produced when DC is consumed?

1) Transportation convenience:

less loss of energy.

AC current is less susceptible to loss as compared to DC. For this reason, it is used on grid stations.

2) AC is easily transformed

Transformers for DC currents are not generally reliable and used. However AC current is easily transformed. Transforming from 11 KV onto 250 V.

3) Generation and cost-effective

AC generators are economical for centralized power plants that supply power across cities.

4) Historical development and infrastructure.

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Initially, when electricity was created, AC current was used. Thus, due to it, all generators installed are able to process that current.

Therefore, changing each device globally is elusive and time-taking.

5) Conversion to DC at time of use : Adaptibility

As adapters of mobile chargers are easy to use, thus there is no such need to re-arrange the all system and produce DC current.