

Mock Exam for CSS: 2026
General Science and Ability

Tuesday
9/10/25

PART-II

Section-I (any two questions from
each section)

Q No 2(a):

Difference Between

Star

- Star is a heavy massive object.
- star revolves around the center of the galaxy called Galactic center.
- Star is itself very shiny.
- Stars have a very high temperature.
- Example of star is Sun.

Planet

- Planet is not a heavy massive object like star.
- Planet revolves around the star.
- Planets are not shiny; they get shining from the star or they get light from the star.
- Planets do not have a very high temperatures like stars only the one which is near to sun is hotter. for example, Earth.
- Example of planets are: Mercury, Venus, Earth, Mars, Jupiter etc.

• life cycle of a star from a Nebula to a Black hole:

There are different stages in the life cycle of a star:

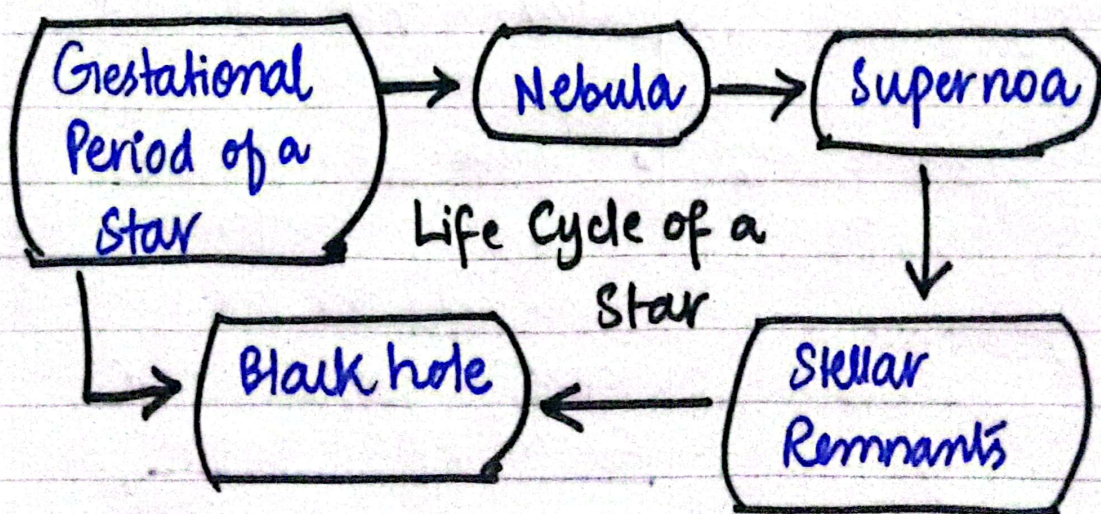
(i) **Gestational period of star:** In this stage dust + particle + matter + antiparticles of matter they all come together for a billion years.

(ii) **Nebula:** when all particles of matter, antimatter, dust when condensed together they form nebula.

(iii) **Supernova:** is the stage when star bursts.

(iv) **Stellar remnant:** is the stage when the radiations of star is spread into many directions.

(v) **The core of the star forms black hole:**
The final stage of a star is the formation of a black hole that generates gravity.



QNO:2 (b)

Semiconductors: "Semiconductors" as the name indicates "semi" means partially. "conductors" means those device which carry or conduct an electric current. Semiconductors are the devices which carry an electric current but not completely; they conduct current only partially.

Difference Between n-type and p-type Semiconductors:

(i) **n-type semiconductors:** These are the type of ^{semi}conductors which consist of excess of free electrons therefore they are called n-type semiconductors. for example: Phosphorus

(ii) **p-type semiconductors:** These are the type of semiconductors which consist of excess of positive charges like protons. Therefore, they are called p-type semiconductors.

for example: Boron

Modern applications of Semiconductors:

The modern applications of semiconductors include:

- (1) TV'S
- (2) Smartphones
- (3) Smartwatches
- (4) Cars
- (5) vehicles

QNO: 2(c)

Global warming: Global warming is defined as a phenomenon in which earth's temperature rises. It occurs due to the increase in greenhouse gases in the environment which traps sunlight and increase the earth's global temperature.

Mechanism of the Greenhouse Effect:

Greenhouse gases in the environment



trap sunlight



absorbs sunlight



reflect sunlight



Increase the earth's average temperature



Resultantly

→ **Global warming**

Three major Greenhouse gases: The three major greenhouse gases are: CH₄, CO₂, NO₂.

Q No: 2(d)

Tsunami: Tsunami is defined as the natural disaster in which sudden outburst of water occurs and flows towards the coastal areas; caused huge destruction and biodiversity loss.

Natural processes that triggers a tsunami:

The natural processes that triggers a tsunami are:

- volcanic eruption
- Earthquake
- fall of Asteroid in any water body

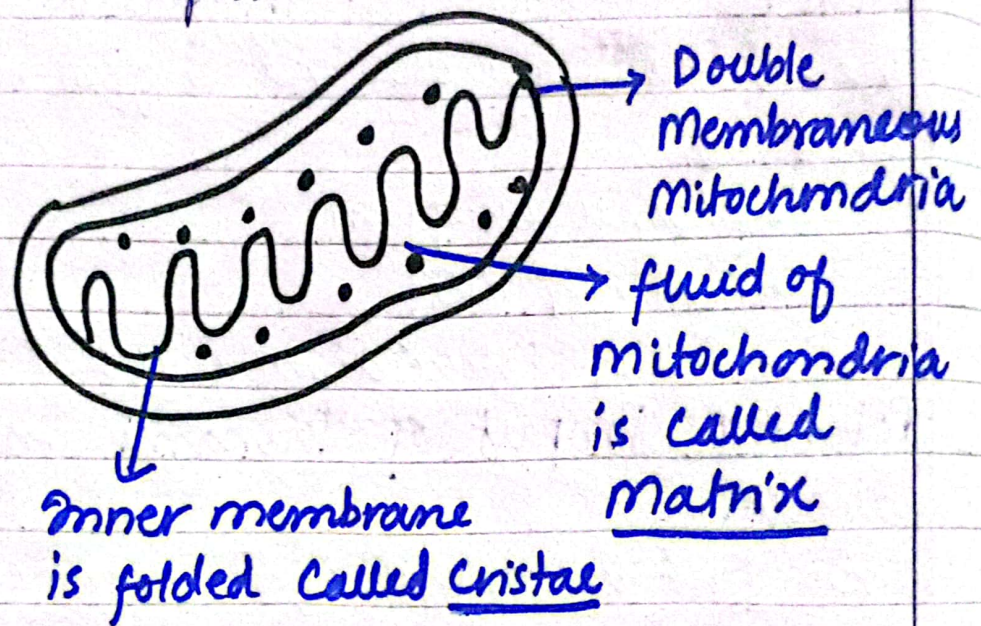
Potential impact of Tsunami on coastal areas:

The potential impact of Tsunami on the coastal areas are:

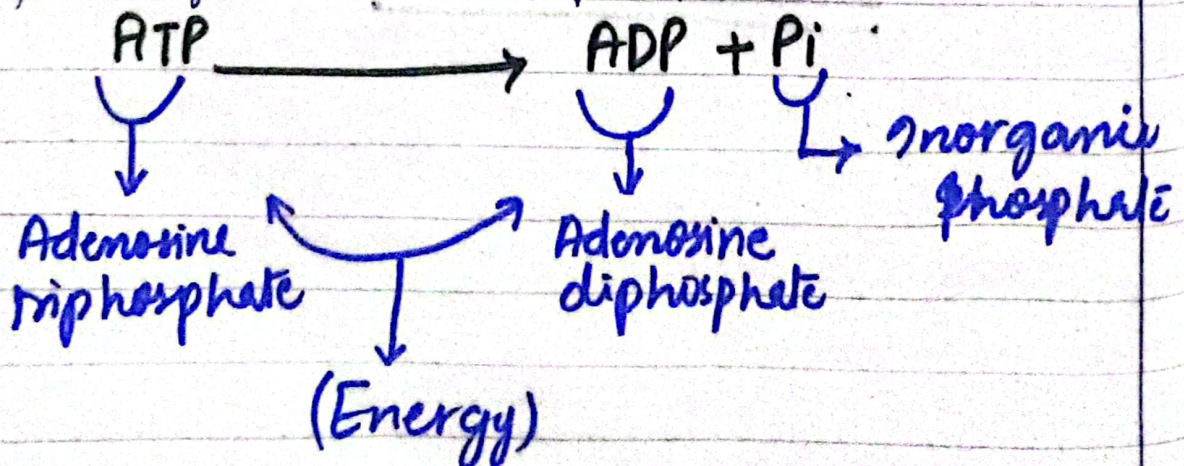
- loss of Biodiversity
 - loss of flora and fauna
 - Infrastructural damages
-
-

Q Nos 3(a)

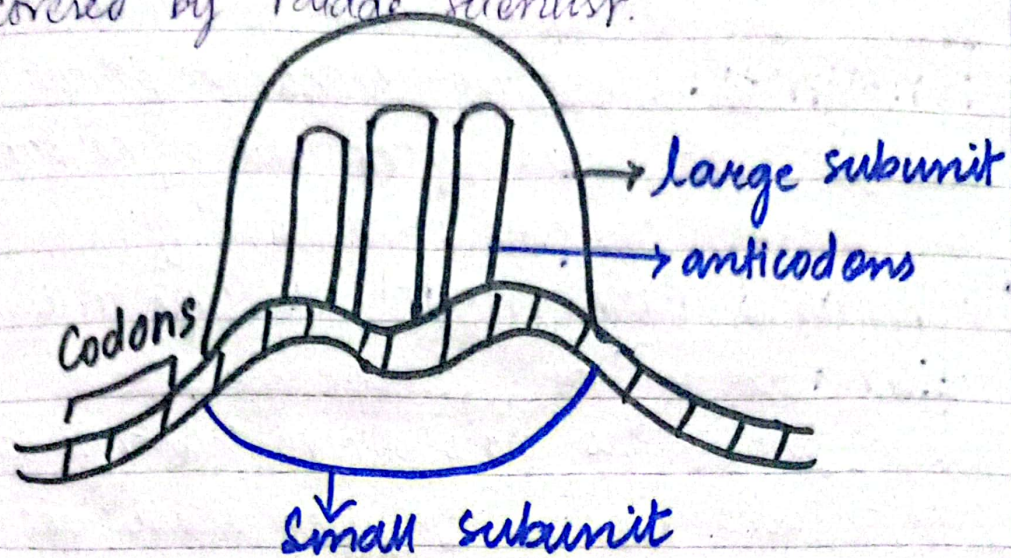
Structure of Mitochondria: Mitochondria is discovered by Altmann. Mitochondria is double membraneous structure that passed from mother to a child. Because mitochondria is not present in the sperm.



Function of mitochondria: The major function of the mitochondria in an animal cell is the production of energy in the form of Adenosine triphosphate.



(iii) **Structure of Ribosomes:** Ribosomes were discovered by Palade Scientist.



In the structure of ribosomes, it contains codons as well as anticodons which are responsible for the making of proteins in the cell.

Function of ribosomes: The main function of the ribosomes in an animal cell is the making of proteins. Therefore, ribosomes are also called as "Protein factories".

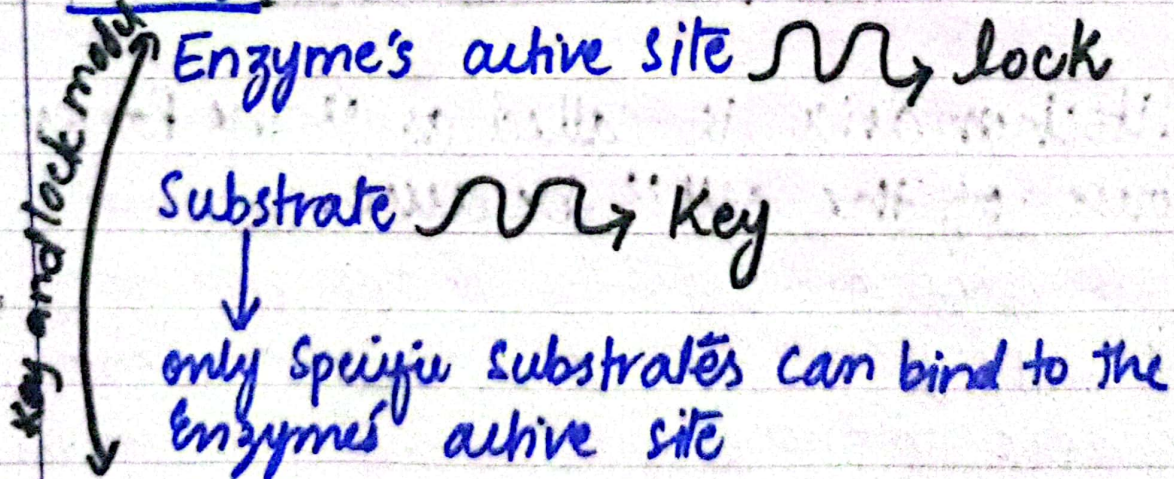
Mitochondria is called as "the Power house of the cell" because: The main work of the mitochondria is the production and supply of energy in a cell in the form of Adenosine tri phosphate. Therefore, mitochondria is known as "the power house of the cell."

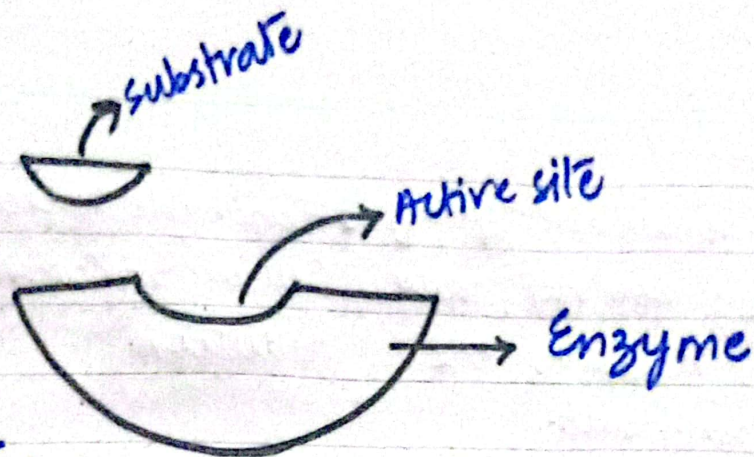
QNO: 3(b)

Enzymes: Enzymes are the biological catalysts that speed up the rate of reaction by lowering the activation energy.

"lock and key" model of enzyme action:

The enzyme is the place where substrate can come to bind for. The enzyme's active site is responsible for the binding of the substrate. Only some particular substrates can bind to the enzyme's active site. Not every substrate can bind to the enzyme's active site. Therefore, substrate is the key and enzyme's active site is the lock. This lock and key model of an enzyme is given by Fischer.





[Key and lock model given by fischer]

list two factors that affect enzyme activity:

The two factors which can affect an enzyme activity are:

- 1) Temperature
- 2) PH

QNO: 3(c) Difference Between

Non Renewable Energy

- A type of energy which can be re-used again and again and cannot be replenished in short span of time.

Renewable Energy

- A type of energy which can once be used is replenished and do not get over a long period of time.

- Non-renewable type of energy does not cause any harm to the environment.

- It does not consist of highly pollutant gases such as CH_4 and CO_2 etc.

- Examples of non-Renewable Energy are: wind energy, solar energy, Geothermal energy etc.

- Renewable source of energy causes environmental pollution.

- It consists of highly pollutant gases such as CH_4 , CO_2 etc.

- Examples of Renewable Energy are: fossil fuels, coal, petrol etc.

Potential of wind Energy as a Sustainable Source for the future:

wind energy can be used as a sustainable source for the future because wind is the type of non-renewable energy. It means that this energy is vastly available everywhere and cannot be replenished easily. Therefore, wind energy can be used as a sustainable source of energy for the future.

Q.No: 3(d)

Dengue Fever: Fever which is caused by the mosquito which bite any living being and caused Dengue is known as "Dengue fever".

Vector which is responsible for the transmission of Dengue: The vector which is responsible for the transmission of Dengue is Aedes Species such as Aedes Aegypti.

Common Symptoms of Dengue fever:

The common symptoms of the Dengue fever are:

- 1) High Grade fever
- 2) Pain in body
- 3) Headache
- 4) Loss of appetite
- 5) weakness

Key preventive measures: The key preventive measures for the dengue fever are:

- Dengue vaccines (DENV1, DENV2, DENV3)
 - Antipyretic medicines to reduce fever and pain
-

Section II (any two)

QNO: 6(a)

Data:

- "A" Pipe fills tank in 10 hours
 - "B" pipe fills tank in 15 hours
 - "C" pipe can empty the full tank in 30 hours
- how much time will tank be full = ?

Solution:

- There are three pipes A, B and C.
- "A" pipe is taking 10 hours to fill the tank.
- "B" pipe is taking 15 hours to fill the tank
- "C" pipe is taking 30 hours to empty the full tank.
- Therefore, the time to full the tank is 30 hours

Rough work to solve answer

$$2 \mid 10, 15, 30$$

$$3 \mid 5, 15, 15$$

$$5 \mid 5, 5, 5$$

$$1, 1, 1$$

$$2 \times 3 \times 5 = 30$$

✓ 6 ✓

QNO: 6(b)

Data:

⇒ X, Y, Z are three employees

"X" ratio = 4

"Y" ratio = 5

"Z" ratio = 7

⇒ Salaries of X, Y and Z employees are:

· X's original salary = ?

Y's salary is increased by 10%.

Z's salary is decreased by 25%.

total combined salary is 1,69,500

Solution:

$$Y's \text{ share} = \frac{5}{16} \times 1,69,500 = 52,968.75$$

$$Z's \text{ salary} = \frac{7}{16} \times 1,69,500 = 74,156.25$$

$$X's \text{ salary} = \frac{4}{16} \times 1,69,500 = 42,375$$

The original salary of "X" is 42,375

Q NO: 6 (c)

Data:

- $\frac{3}{5}$ of road completed in 60 days
- 10 additional workers are hired
- the remaining work is finished in 20 days
- Original workers contractor have = ?

Solution:

Road	days (x_i)	workers (y_i)
$\frac{3}{5}$ th	60	x
	20	10

$$\frac{x_1}{y_1} = \frac{x_2}{y_2}$$

$$\frac{60}{x} = \frac{20}{10}$$

$$\frac{30}{1} = x$$

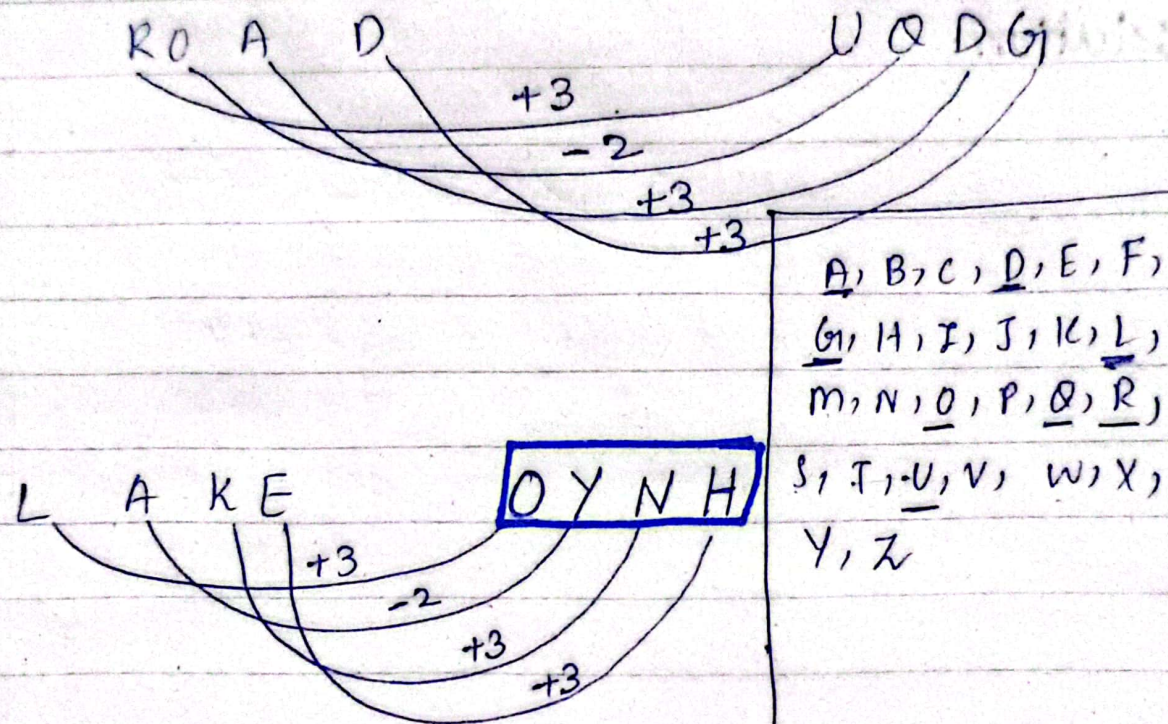
$$x = 30 \text{ workers}$$

QNO: 8(a)

Data:

ROAD $\longrightarrow$ UQDG
LAKE $\longrightarrow$?

Solution



- As the code for ROAD is UQDG in which U is three steps forward, so for L it is O which is three steps forward. For O in code is Q which is two steps backward. so for A two steps backward is Y and for A in the code is D which is three steps forward so for K it is N which is three steps forward. for D it is G which is again three steps forward so for E it is H which is three steps forward.

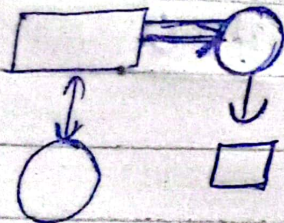
QNo: 8(b)

Data:

- A man tells a woman, "The son of my sister's husband is the father of your son"
- How is the woman related to the man = ?

Solution:

A man tells a woman



A man is the husband of woman

- = female
- = male
- ↔ ○ husband wife
- = ○ brother sister
- ↓ child
- ↓↓ children

Q No: 8 (c)

Find the next number:

(i) $4, 12, 6, 18, 9, 27, \underline{15}$

$+8 \quad -6 \quad +12 \quad -9 \quad +18 \quad -12$

$+4 \quad +6$

(ii) $1, 2, 6, 24, 120, \underline{720}$

$+1 \quad +4 \quad +18 \quad +96$

$$2 \times 3 = 6$$

$$6 \times 4 = 24$$

$$24 \times 5 = 120$$

$$120 \times 6 =$$

Q No: 8 (d)

Data :

P, Q, R, S, T are five friends

- P is shorter than Q but taller than R
 - S is shorter than T but taller than Q
- The shortest person is 150 cm tall and the tallest is 180 cm tall. Who among the friend is third tallest and what is maximum possible range of their heights = ?

Solution:

R $\uparrow$ P $\downarrow$ ~~Q~~ Q S T

The third tallest is Q

$$\frac{150 + 180}{2} = \frac{330}{2}$$

$$\begin{array}{r} 180 \\ 150 \\ \hline 330 \end{array}$$

The maximum possible range of their heights is 165 cm