



SUPPLEMENT

Name of Examination: SSC / HSC Part I - II 20
Annual/Supplementary

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Paper _____

Date _____

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Part-II (Section-I)

Q4 a)

Answer 1- Definition

"Dry piece of land is submerged under water, called flood."

When a piece of land is overwhelmed by the massive water, it is called flood.

Main Causes of Floods

Following are main causes:

1)

Deforestation

The cut down of trees causes imbalance of land - hence, floods.



b) Global Warming

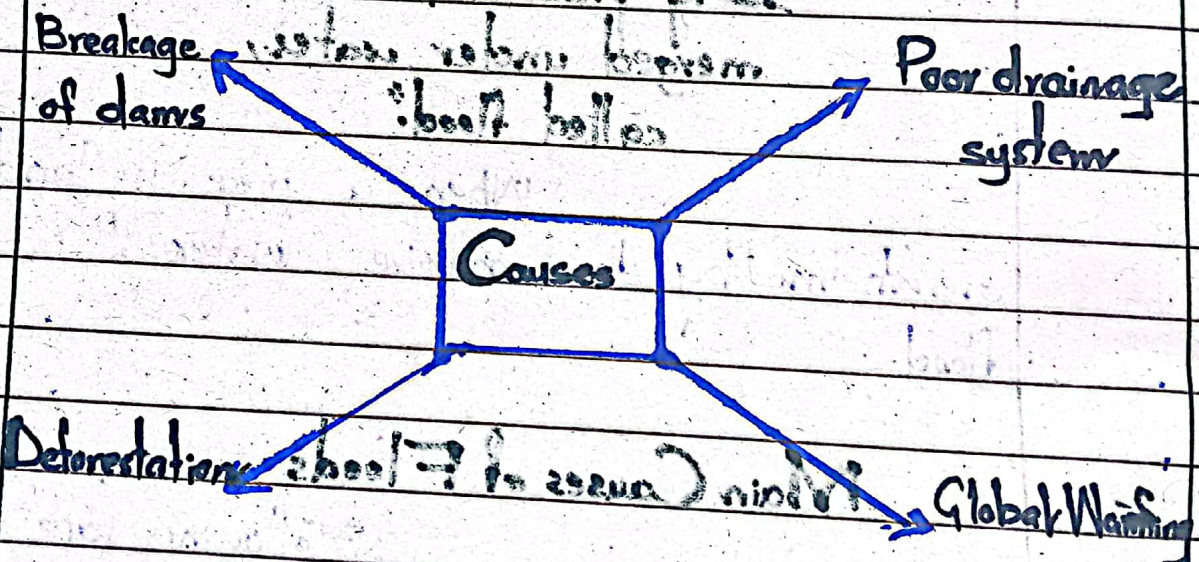
Rising annual temperature contributes to weather patterns, hence, floods.

c) Breakage of small dams

Additionally, break-down of dams call for floods.

d) Poor drainage system

Moreover, poor drainage contributes to flood.



3-

Difference between floods of 2022 and floods of 2010

Undenably, 2010's flood was super; however,

"2022 Floods shook Pakistan"



devastatingly."

(Antonio Cuartero)

A chart below represents as:

2010 - Flood	2022 - Flood
> 33 millions refugee	< 33 millions refugee
5 millions IDPs	8 millions IDPs
10 billions loss	15 billions loss

(- Economic Survey)

4-

National Disaster Management

Authority

After floods of 2010, the government launched the NDMA to cope with disasters, like floods.

"NDMA performs by mitigation, preparedness, responsiveness, and recovery."

Thereby, from detergency to recovery, the NDMA overcome implications of floods.

Q4b)

Answer 1- Star

"Star is a satellited body in the universe."

Star is a satellite. It contributes to the construction of the universe.

2-

Planet

"Planet is a revolves body around Sun."

Planet is also a part of universe, which moves around itself, and sun, too.

3-

Difference between Star and Planet

	Comparison	Star	Planet
a)	Meaning	Star is a satellite in the universe.	Planet is a body in the universe.
b)	Nature	It is composed of hot gases.	It is not much hotter.
c)	Energy	It has own energy.	It gets energy from Sun.
d)	Revolution	Star is a source of revolution.	Planets revolve around star.
e)	Well-known Example	• Sun	earth



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Star becoming a black hole

The denser star attracts more object of heavy weight.

As, density \propto mass

Similarly, when a star attracts objects, it captures them inside itself. The continuous capture consequently, changes nature of a star into a huge ball possessing a deep hole; hence, so called stellar black hole.

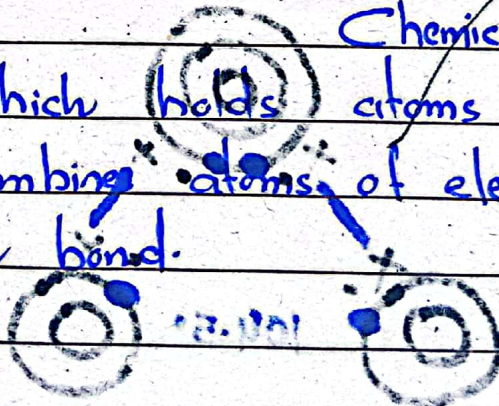
Q4 c)

Answer 1-

Chemical Bond

"The chemical force, which holds atoms together, is called chemical bond."

Chemical bond is a force, which holds atoms together tightly. This combines atoms of elements and forms chemical bond.



Formation of Chemical Bond

Chemical bond is formed by losing and gaining, sharing, and donating and accepting of electrons.

For example:

1) NaCl (Sodium Chloride, by losing and gaining)

2) H_2O (Water, sharing of electrons)

3) NH_4 (Ammonium, donating and accepting)

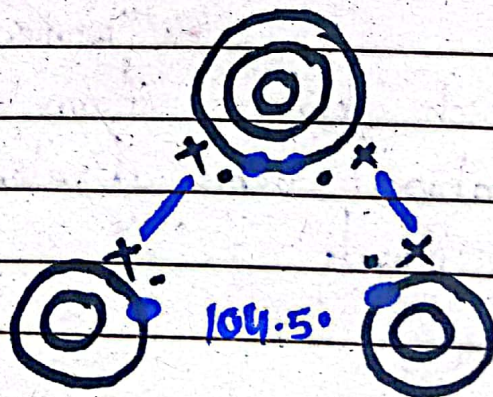
3-

Structure of Water - H_2O

"Water is a polar covalent with angular structure

at 104.5°

Structure of water is angular. It is due to lone pair-lone pair repulsion.



H_2O , Water



Q:4d)

Answer 1-

Conductors

"Conductors are materials that allow conduction of electricity."

Conductors are materials. They allow flow of electrons to conduct electricity.

For example: Aluminium, Iron, etc.

2-

Semiconductors

"Semiconductors are materials that have properties of conductors and insulators."

Semiconductors are also electrical materials - which possess properties of metals and non-metals.

For example: Silicon, Germanium etc.

3-

Metals

"Metals are such materials which are responsible for conduction of electricity."

Metals are electropositive.

They have high melting and boiling point. Thereby, they allow free-flow of electricity.

For example: Iron

4-

Plastic

"Plastic is Latin word, meaning 'to mould'."

Plastics are optic materials. They are insulators, possessing low density, having transparent and colorful appearance, using in variety of needs.

Forexample: Polyvinyl, polyethylene etc.

5-

Ceramics

"Ceramics are inorganic materials made up of clay."

Ceramics are inorganic substances. They can easily be hardened and shaped. Moreover, ceramics are hard, strong, stiff materials.

Forexample: pottery



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Subject Physics Paper Practical

Date 12/10/2023 Signature of Examiner [Signature]

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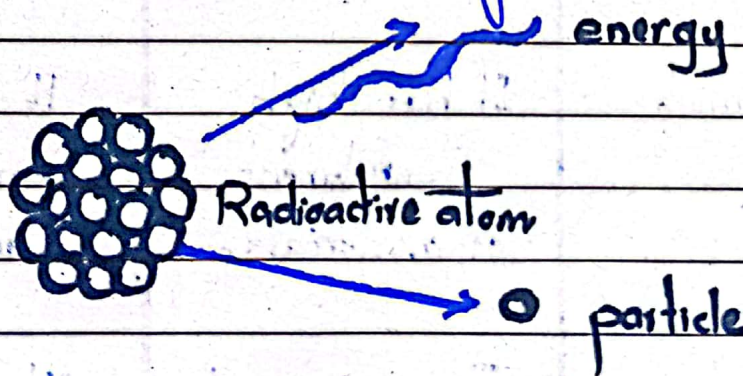
Q:5a)

Answer 1-

Radioactivity

"Process in which heavy radioactive materials are break-down into simpler."

Process of disintegration of heavy nucleus into simpler - called radioactivity. When a slow moving electron is bombarded on heavy nucleus, it breaks into smaller particles, hence, it is called radioactivity.

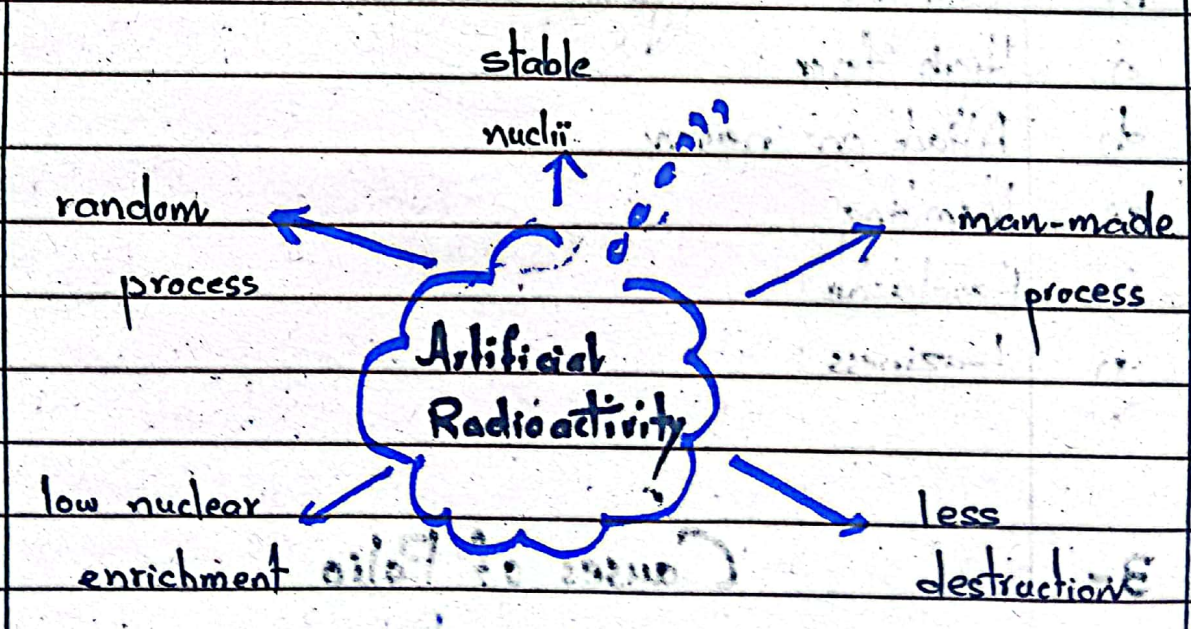
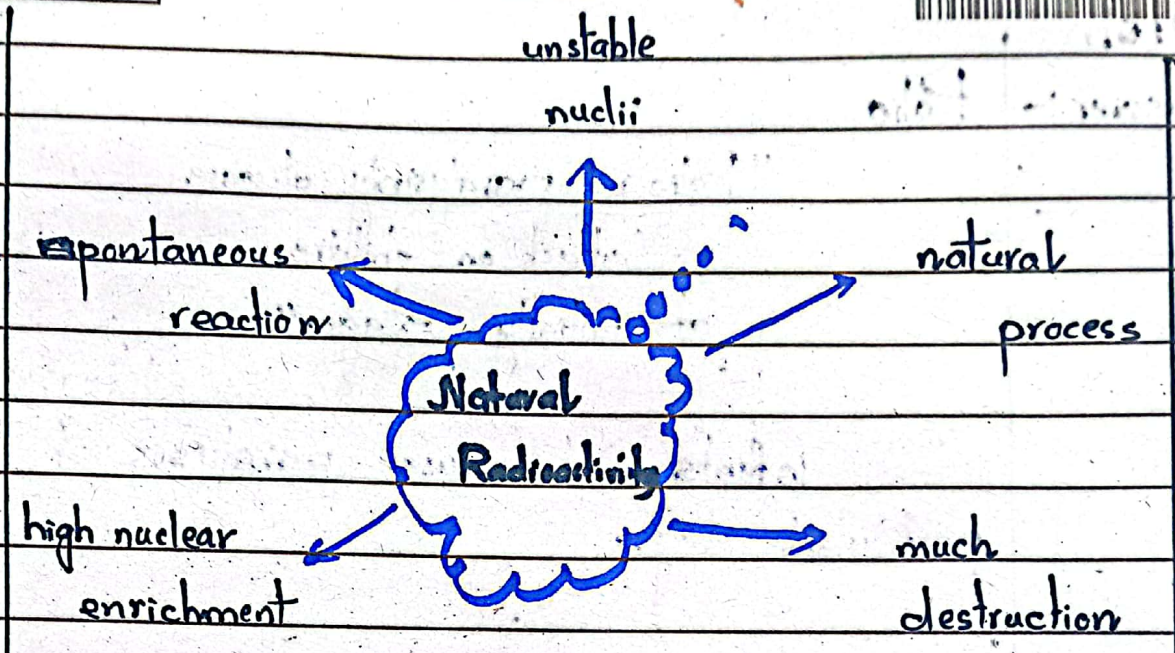


Radioactivity

2-

Difference between natural and artificial radioactivity

Comparison	Natural Radioactivity	Artificial Radioactivity
a) Meaning	Breakdown of heavy nucleus naturally.	Breakdown of heavy nucleus artificially.
b) Process	It is natural process.	It is man-made process.
c) Reaction	It is spontaneous reaction.	It is random reaction.
d) Nuclii	It occurs in unstable nuclii.	It occurs in stable nuclei.
e) Enrichment	It has high enrichment of materials.	It has low enrichment of materials.
f) Outcome	It causes much destruction.	It causes low destruction.



Q: 5b)

Answer 1- Polio

"Polio is a paralyzing disease

attack on children

at initially - stage."

Polio is a disease that attacks infants. It causes paralysis of body, particularly legs.

2-

Symptoms of Polio

Following are symptoms listed:

- a) Paralyze of body
- b) Paralyze of legs
- c) High fever
- d) Attack on neuron
- e) Vomiting
- f) Headache
- g) Laziness

3-

Causes of Polio

Polio has a main cause. It is spreading due to lack of vaccination process or avoid of vaccination.



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Serial No. 282306

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Signature of _____

Invigilator _____

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Consequently, infants face paralyzing
of their body.

"Polio is caused by

"poliomyelitis virus"

Thereby, polio is a viral disease.

4-

Prevention of Polio

Polio can only be
prevented through effective polio vaccination.
It is the only way to keep children
away from polio.

5-

Polio Vaccination

Polio is a viral disease.
It can also be avoided by vaccination.

"Poliomyelitis-control vaccination

reduce spread of

polio"

Thus, polio has an effective vaccination.



Q5c)

Answer 1-

Solid Waste Management (SWM)

"Solid Waste Management
are wastes, including
solid and semi-solids."

Solid Wastes including
solid and semi-solid wastes. However, SWM
is a methodology to curb SW.

2-

Steps of Solid Waste Management

Following are
steps:

a)

Collection

Collection of solid wastes
is the first step.

"Solid wastes should be
collected effectively."

b)

Separation

Secondly, separation of solid
wastes can produce effective management.

"Solid and semi-solids
can be separated effectively"

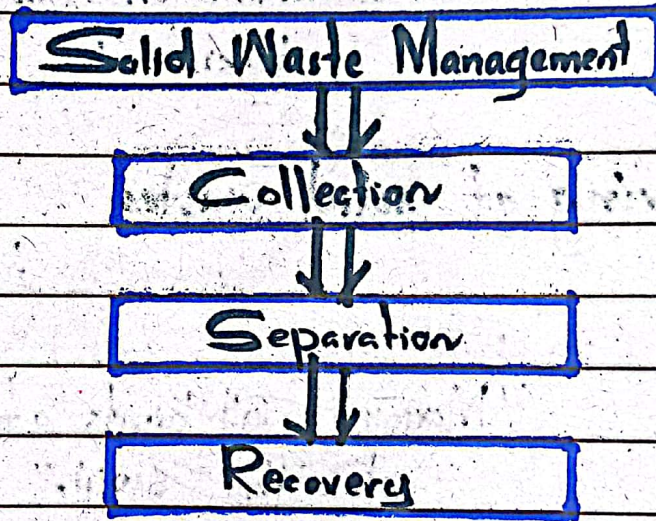


c)

Recovery

Additionally, recovery of solid wastes can save materials. It can maintain environmental stewardship.

"Recovery is a main frame of solid waste management."



3-

Main Issues of Solid Waste Management in Pakistan

Issues:

Following are

a)

Dumping of wastes

Solid wastes are mostly dumping in Pakistan.

START FORM HERE

"Dumping of wastes can cause ground pollution."

b) Burning of wastes

Further, burning of wastes can also hurdle to SWM.

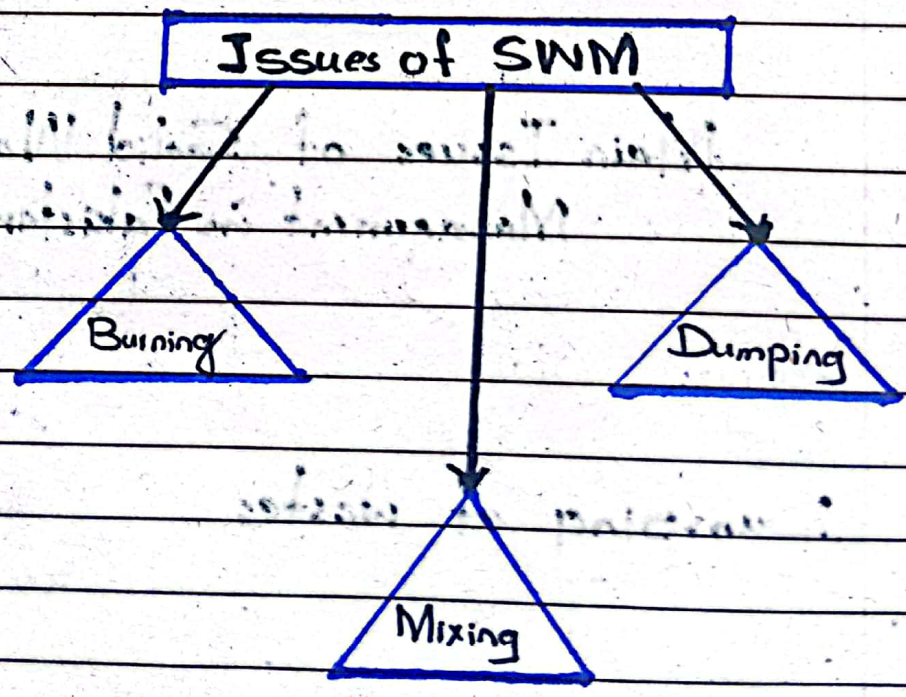
"Burning is the most common issue of solid waste management in

Pakistan."

c) Mixing of solid wastes

Moreover, mixing of solid wastes also delay Solid Waste Management.

"Mixing of all kinds of wastes slow the SWM."



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5d)

Q.1. Population Planning

"Population planning is a methodology of demographic maintenance."

Population planning is a demographic measuring technique. In fact, it maintains the population strategy for the sustainable development.

Benefits of Population Planning

benefits:

Following are

1) Population Explosion - downfall

growing population trend. Population planning controls

START FORM HERE

"Population planning controls population bomb."

b) Economic Development

Likewise, economic development is another benefit of population planning.

"Less population - less economic burden."

(Same Haq)

c) Human Development

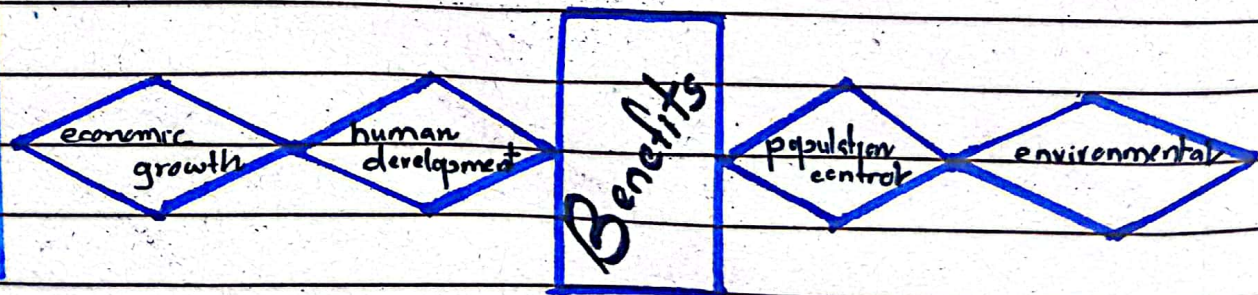
Similarly, human development increases due to population planning.

"Effective population planning contributes to human development."

d) Environmental Stewardship

Moreover, environmental stewardship is also an outcome of population planning.

"Less populated country - sustainable environmental development"





Q.6a)

wert

Date

Enrollment in January 2022 = 850

Enrollment in January 2023 = 1120

What is percentage increase?

Solution

According to the formula:

$$\text{Percentage Increase} = \frac{\text{Original Value} - \text{New Value}}{\text{Original Value}} \times 100$$

$$= \frac{850 - 1120}{850} \times 100$$

$$= \frac{270}{850} \times 100$$

$$= 31.8 \text{ percent}$$

Thereby, increased percent is 31.8 percent.



Q: 6b

Answer

Data

$$\text{Age of son} = x$$

$$\text{Father's age} = 5x$$

Two years ago, the sum of squares of ages = 114

What is son's present age?

Solution

Age of son and father,

$$x \quad 5x$$

Two years ago,

$$x-2 \quad 5x-2$$

Sum of squares of ages,

$$(x-2)^2 + (5x-2)^2 = 114$$

$$x^2 + 4 + 25x^2 + 4 = 114$$

$$26x^2 + 8 = 114$$

$$26x^2 = 114 - 8$$

$$26x^2 = 106$$

$$x^2 = \frac{106}{26}$$

$$x^2 = 4$$

$$x = \sqrt{4}$$

$$x = 2$$

Thereby, ~~two years ago~~ Son's present age is 2 years.

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c)
Data

$$\text{no. of heads} = 48$$

$$\text{no. of feet} = 140$$

Find the no. of hens?

Solution

H \rightarrow Hens and C \rightarrow Cows

1 head of hen and 1 head of cow, so $H + C = 48 \rightarrow (1)$

2 legs of hen and 4 legs of cow, so $2H + 4C = 140 \rightarrow (2)$

now, multiply equation (1) with (2),

$$2H + 2C = 2(48)$$

$$2H + 2C = 96 \rightarrow (3)$$

now, subtraction of data as:

$$2H + 4C = 140$$

$$-2H + 2C = 96$$

$$2C = 44$$

$$C = 44/2$$

$$C = 22$$

START FORM HERE

By putting value, $C=22$

$$H+C=48$$

$$H+22=48$$

$$H=48-22$$

$$H=26$$

Therefore, hens are 26.

Q6d)

Answer- **Data**

Car speed in the first journey = 40 km/h

Speed of car in the second-half journey = 60 km/h

What is average speed of car?

Solution

According to the formula:

$$\text{Average Speed} = \frac{2xy}{x+y}$$

$$Av(s) = \frac{2 \times 40 \times 60}{40+60}$$

$$= \frac{4800}{100}$$

$$= 48 \text{ km/h}$$

Thus, average speed of car is 48 km/h.