

Part II

General Instructions

SECTION B

1. Give numbering to headings

2. Do not write lengthy paragraphs. Write medium sized paragraphs with headings.

3. Do not use table for comparison and contrast questions.

4. Draw figures/diagram/flowchart where needed.

5. Start new question from fresh page.

6. Write unit of the answer in ability section.

7. Explain mathematical steps and the reasoning for better score.

8. Change colour scheme for references to give them more visibility.

9. Manage time well.

10. Wide page borders are discouraged.

Should be reasonable.

11. Avoid writing wrong references.

12. Give more weightage to expressly asked part/s of the question.

Speed of a car at and = 60 km/h

Let put these values in eq-①

$$\text{Average} = \frac{40 + 60}{2} = \frac{100}{2} = 50$$

So average speed of a car is 50 km/h

16) If ROSE is coded as 681² CHAIR is coded as 73456, P~~REACH~~ is coded as 961473, what will be coded for SEARCH?

Reasoning?

16

If ROSE is coded as 6281² CHAIR is coded as 73456, P~~REACH~~ is coded as 961473, then the SEARCH is coded as 214673.

10) A is the brother of B and B is the sister of C, C is the father of D.

How D is related to A. D being a male member.

Sol:

A is the brother of B

B is the sister of C

C is the father of D

we have to find

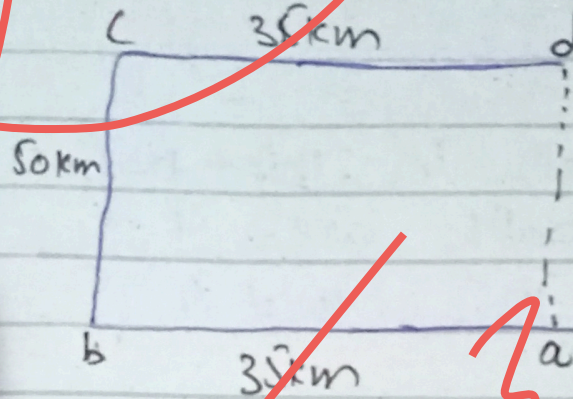
How D is related to A

So from the above statement we concluded that

D is the Nephew of A.

Explain how?

6) Kachinda travels 55 km toward the west,
 takes a right turn and travels 50 km
 more north, she takes another right turn
 and travel 35 km in that direction.
 How far is she from her original
 position.



we have to find ad ?
 - the distance $\xrightarrow{\text{to}}$ travel from $ab = 35\text{km}$
 " " " " $bc = 50\text{km}$
 " " " " $cd = 35\text{km}$

So according to the above direction we
 concluded that the distance between
 ad is 50 km

She is 50 km far from its original
 position.



Q6 (1) Three bags contain 3 red, 7 black, and 4 red & 6 blacks respectively. 1 of the bags is selected at random and a ball is drawn from it. If the ball drawn is red find the probability that it is drawn from the third bag.

Sol

Total Balls in third bag = 10
 Red balls are = 4
 Black " " = 6

Now we have to find probability of red balls in third bag.

Formula for the probability

$$\text{Probability} = \frac{\text{Number of events}}{\text{total occurrence of possible events}} \times 100$$

$$= \frac{4}{10} \times 100 = 40$$

Probability of red balls in third bag is 40.

Part II

Section A

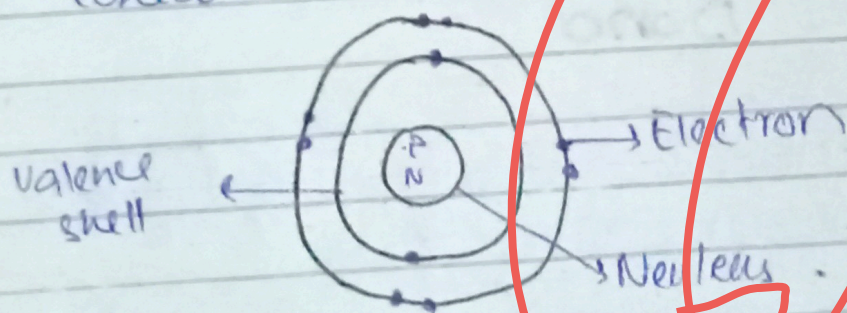
Q2(a)

Atom

Atom is fundamental unit of matter. All the matter is made up of atoms. Even the single dot of pencil contains thousands of atoms.

Structure of atom

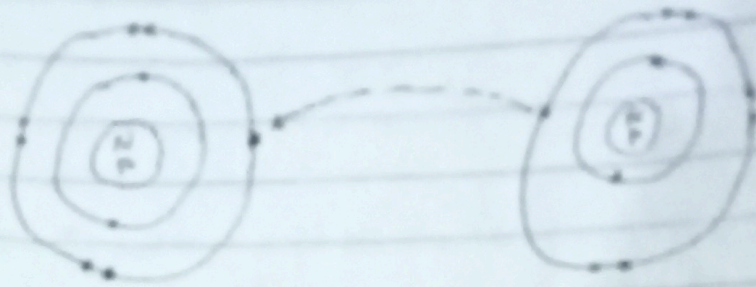
Atom has two regions the nucleus and valence shell. Nucleus contains proton and neutron while shell contains electron.



Octet rule in chemical bonding
In order to attain stability atoms make chemical bonds. Atom attains stability when in the outermost shell contains 8 electrons and this is octet rule. Octet rule is the rule that atoms make bonds in order to complete

8 electrons in the outer most shell

For Example

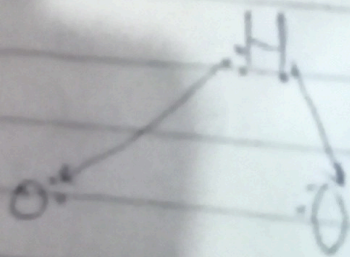


So atoms may bond to attain stability by the complete transfer of one electron or through the sharing of electron.

Covalent Bond

Covalent bond is a sharing of one electron or sharing of pair electron between two atoms.

For Example



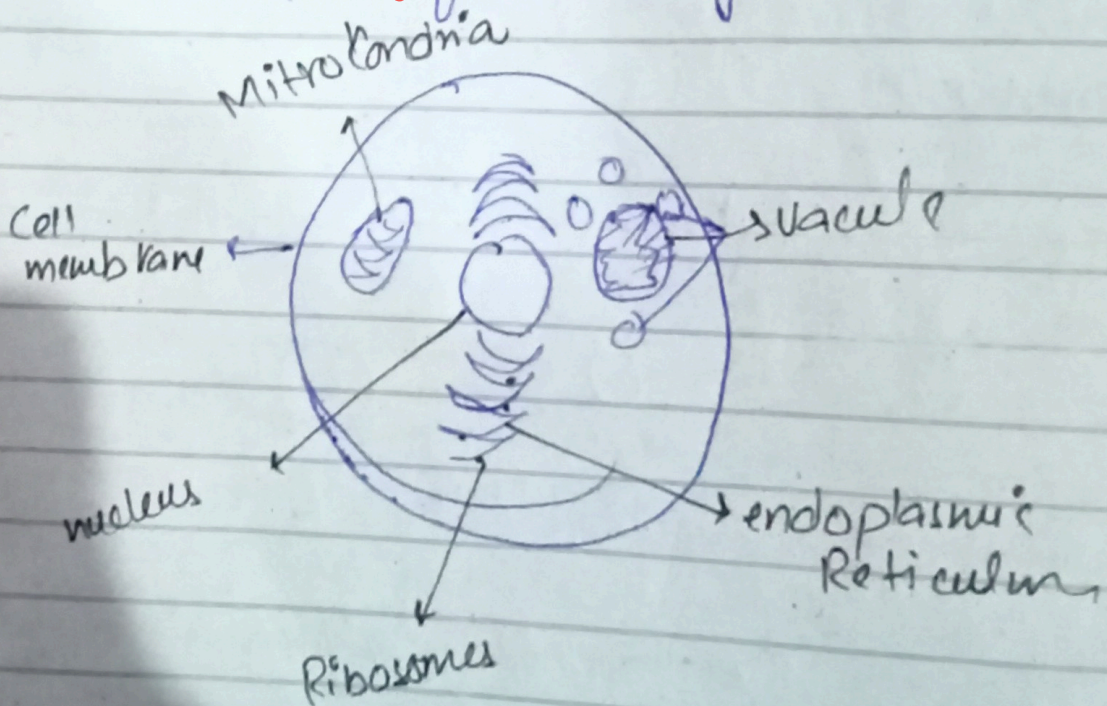
Types?

(d) Describe the "cell structure". write down the functions of at least three subcellular organelles.

Ans

Cell: cell is the basic unit of all living organisms. All living organisms are made up of ~~the~~ cells. some organisms are unicellular while some are multicellular.

Structure of cell
cell contains subcellular organelles that work together in order to proper functioning.



Function of cell membrane

- cell membrane is permeable membran it controls or act like a bodyguard members. It controls the entering of substances to in the cell. It protects the cells from the ~~harmful~~ entry of harmful substances.
- It also helps in giving the proper shape to cell.

Function of Mitochondria

- It is called the power ^{house} cell or energy production in cell.
- It produces energy that are necessary for the survival and functioning of cell.

Vacule

- It is small in animal cell but large in plant cells it contain water.
- Its ~~is~~ function is to store water in it.

Q5 (b) - what is artificial intelligence? write its pros and cons.

Answer

The stimulation of human traits in machine that act and behave like a human is known as artificial intelligence.

Example of Artificial Intelligence

- Playing chess game (Machine)
- Can Drive a car
- Most primitive example is shop shofia.

→ Pros of the artificial intelligence

- 1- Reduction in Human Error
- 2- Takes risks instead of Human
- 3- Consumes more in less time
- 4- Available 24 hours
- 5- New Inventions and faster Decision.

Cons of AI

- 1- High cost of creation
- 2- Making human lazy
- 3- Unemployment
- 4- Lack of emotions
- 5- Lacking creative thinking.

Q) why water molecule is angular in structure?

Answer:

Atom molecules are always in angular structure because the sharing of electrons between the hydrogen and oxygen atom.

Chemical bond in water molecules water molecules made covalent bond in order to attain stability.

As they share electron, this sharing make the structure of water molecules in angular form.

For example:

