Dos and Don'ts for the General Science & Ability Paper

Hi there — you've prepared well! Remember, knowing the content is one thing, but presenting it in the paper exactly as required is another. Here are a few key points to keep in mind:

1. For a 5-mark part, aim to write at least 2 and at most 3 sides of the answer sheet. Often, a question has two or three parts, and the marks are divided accordingly — so address each part fairly.

2. Manage your time wisely. You have about 35 minutes per full question, which comes down to around 8 minutes for each 5-mark part. Stick to this to avoid rushing later.

3. Make your answers look scientific, not just theoretical. Use flowcharts and diagrams wherever they add clarity.

4. Neatness matters — keep your handwriting clean, avoid cutting or overwriting.

5. Mind your spelling and grammar — while GSA doesn't deduct marks for these, your expression leaves an impression.

6. In the ability portion, explain analytical ability questions in words. For a 5-mark part, show all steps and provide clear explanations.

Good luck for CSS 2026 — you're going to ace it, in sha Allah! 🌟

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(39)

03/01/2026   Day: Saturday

PART-II
SECTION-II
ANSWER-2
(a)
BIG BANG THEORY

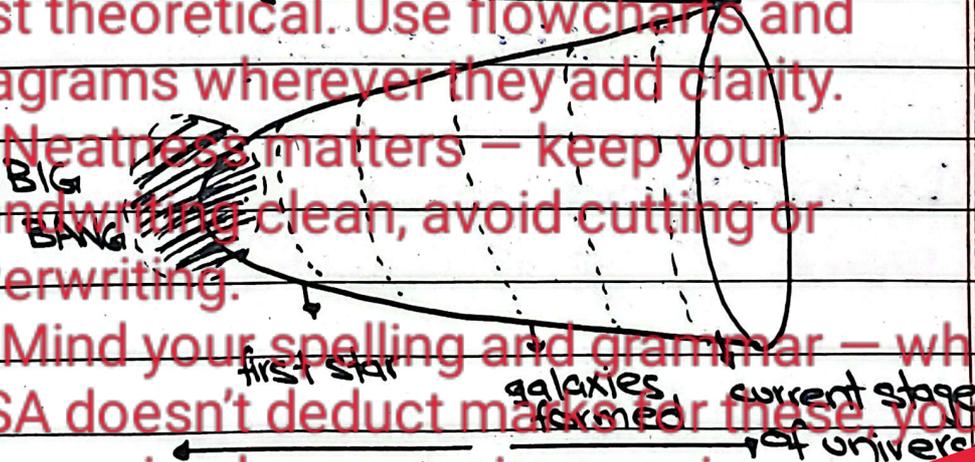The structure and age of the universe is explained by the Big Bang Theory. The theory states that universe emerged from a single point singularity and then stars and eventually galaxies were formed.

Expansion of universe

BIG BANG → first star → galaxies formed → current stage of universe

13.7 Billion Years

Big Bang Theory explains structural expansion of universe.

Evidence of Expansion

Big Bang Theory suggests that the universe is in continuous expansion. Phenomena of 'Red Shift' of planets validates this claim.

Age of Universe:

$$\text{Age of Universe} \sim \frac{1}{H_o}$$

Where, H_o = Hubble's constant

$$= 27 \text{ MCs/Km}$$

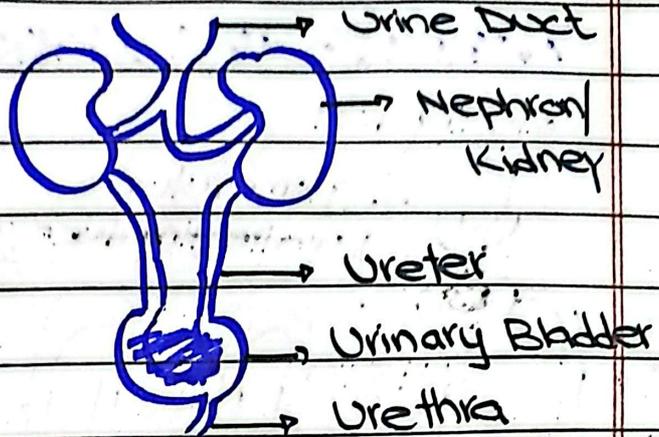$$= 13.8 \text{ Billion Years}$$

(b)

URINARY SYSTEM

Definition:

"Urinary System is an excretory system that is involved with filtration of blood in kidney, and carrying of toxins/waste fluids as urine to the urinary bladder and then out of the body via urethra."
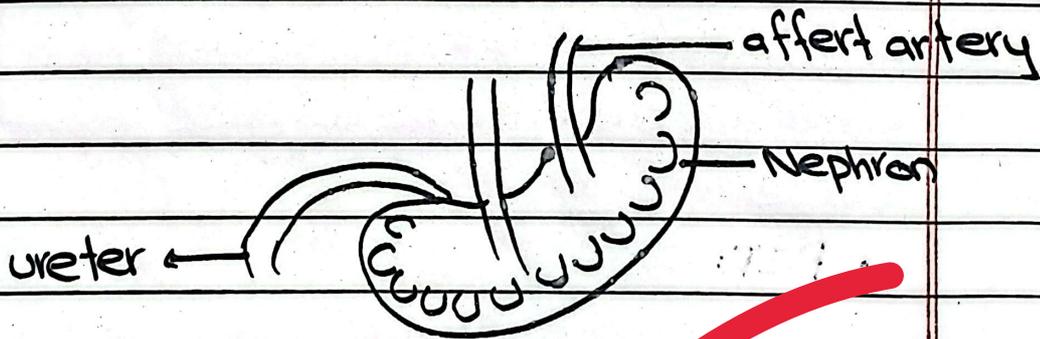
DIAGRAM:

→ Urine Duct
→ Nephron Kidney
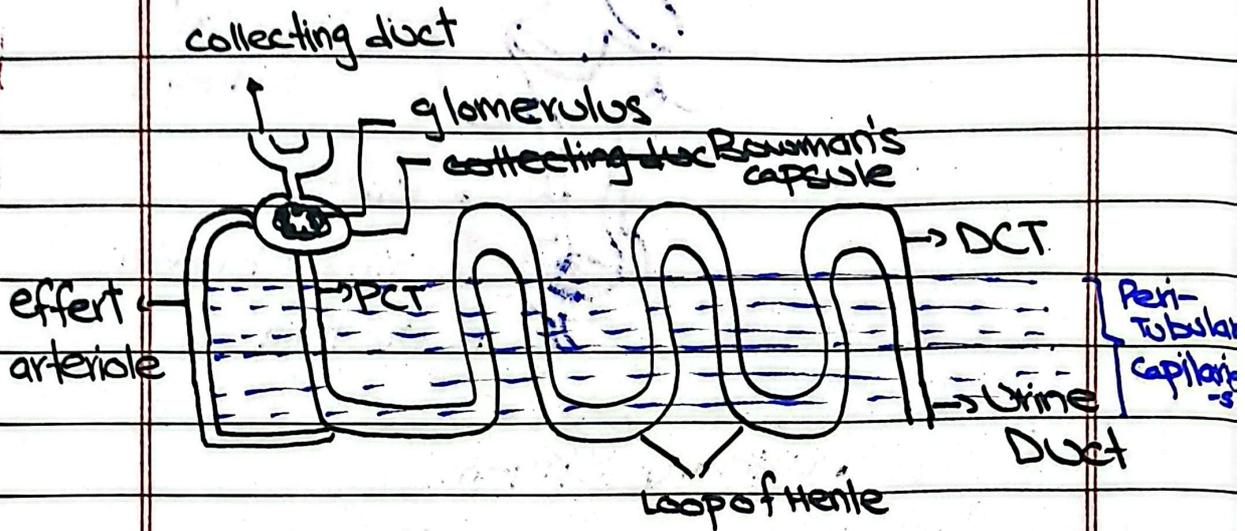→ Ureter
→ Urinary Bladder
→ Urethra

- Urinary System

NEPHRON:

The basic structure/functional part of kidney in nephron. Over 1 Million nephrons are present inside kidney that filter the urine.

— affert artery
— Nephron
ureter ←

- Structure of Nephron

WORKING OF NEPHRON:

collecting duct

glomerulus
collecting duct Bowman's capsule
→ DCT
effert arteriole
PCT
Peri-Tubular capilaries-s
→ Urine Duct
Loop of Henle

• Working of Nephron

• Glomerular Filtrate:
Urine from collecting duct enters glomerulus & is filtered. Wastes are removed by complex network of cappilaries while water, ions, salts, minerals remain as glomerular filtrate.

• PCT:
Reabsorption of water takes place in Proximal convoluted Tubule.

• Loop of Henle:
Excess salts are reabsorbed in loop of henle.

• DCT:
Ions, minerals are reabsorbed in
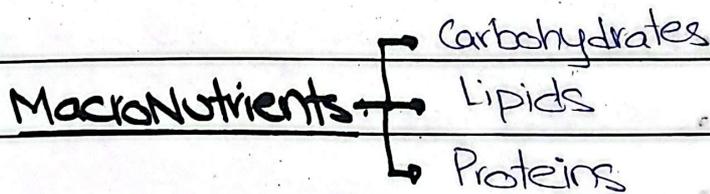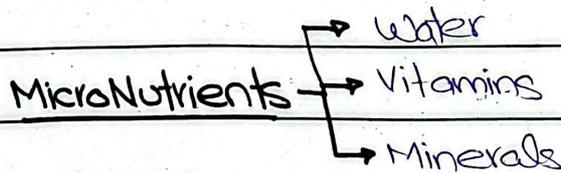
Distill convoluted Tubule.

- Urine Duct:

Wastes are collected in urine duct to be excreted out.

(c)
UN-BALANCED DIET

DEFINITION:

"Diet that lacks balanced proportion of essential micro and macro nutrients is called un-balanced diet."

MicroNutrients
- Water
- Vitamins
- Minerals

MacroNutrients
- Carbohydrates
- Lipids
- Proteins

Components:

- Excessive Packaged Foods Drink
- Extremely Processed Foods
- Fizzy, Sugary Drinks

- Excess Caffiene
- Inadequate water consumption
- Excess Salt Consumption

Affects on Healthy Living:

An unbalanced Diet can adversely affect a persons' physical health, mental functioning and lifestyle.

It can lead to:

- Obesity, Leanism
- Brain fog, Insomnia
- Memory Issues
- Weak bones
- Joint Pain
- Swollen Gums → Anemia
- Blood Pressure Fluctuations
- Weak Immunity against pathogens
- Hairfall, brittle nails
- Bad skin health
- Low energy, Lethargy
- Poor Sleep

(d)

CELL WALL:

It is outermost boundary of plant cell. It is absent in animal cells.

Composition:

Cell wall is made up of cellulose in animal cell.

Cell wall in prokaryotic cell is composed of peptidoglycan.

Structure:

Cell wall is rigid. It provides mechanical support to the cell. It is non-permeable.

CELL MEMBRANE:

This organelle is outermost boundary of animal cell. It is also termed "Plasma Membrane".

Composition:

It is made up of lipids, proteins and phospholipids.

Structure:

Cell membrane is semi-permeable.

It allows transfer of small materials in and out of the cell.

Example:

The fluid-mosaic model of cell-membrane is famous.

Function:- Provides Fluidity & Elasticity to cell.

CYTOPLASM:

It is the structure that exists within the cell membrane till nuclear membrane.

Composition:

It is made of 90% water and 10% of cell organelles.

Structure:

It is jelly-like consistency that provides space for majority of cell functions to take place.

Function: The synthesis of proteins occurs here.

MITHOCHONDRIA:

It is also called The PowerHouse of cell.

add diagrams!

uter membrane

mbrane

Structure:

- It is double membranous
- It is self replicating

FUNCTION:

The production of Ribosomes occurs here.
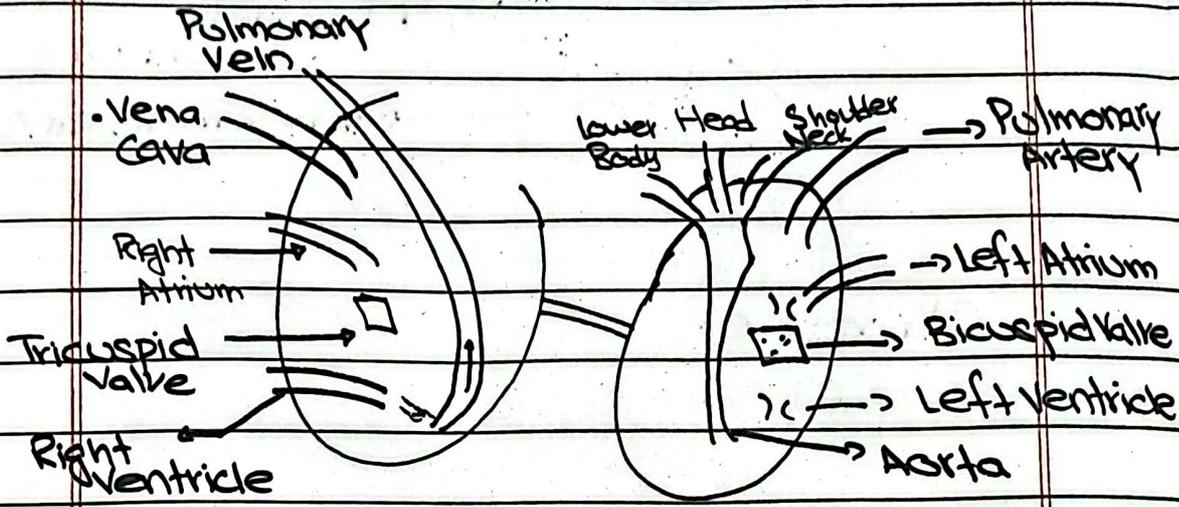
ANSWER:4

(a)

BLOOD CIRCULATION

ROLE OF HEART:

Human Heart is a muscular organ involved in the circulation of blood. It is primarily a " pumping organ ".

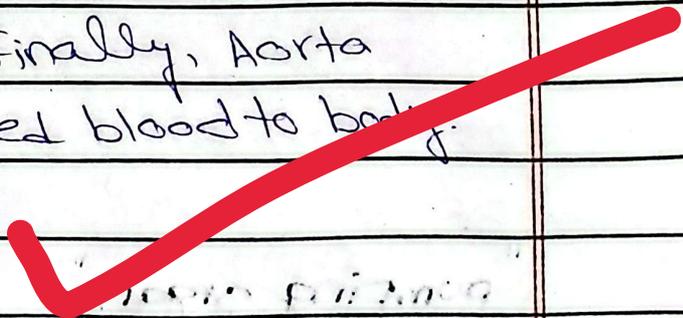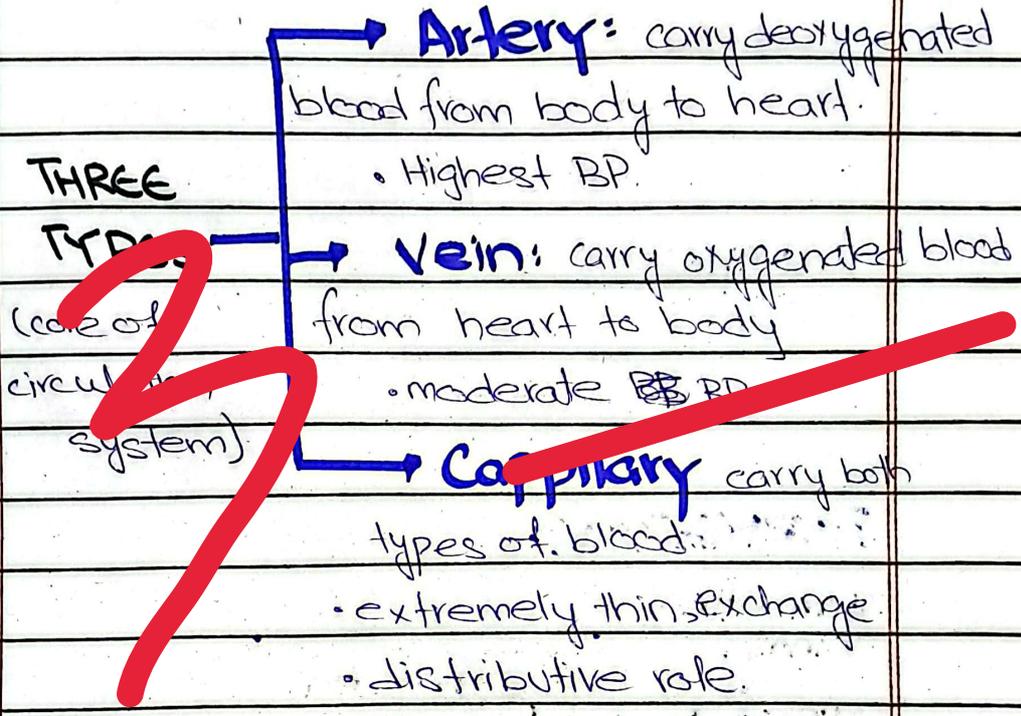It has four chambers and two valves to prevent the

backflow of f/x blood.

Pulmonary
Vein

• Vena
Cava

Lower Head Shoulder ——→ Pulmonary
Body   Neck   Artery

Right
Atrium

Tricuspid
Valve

——→ Left Atrium

——→ Bicuspid Valve

——→ Left Ventricle

Right
Ventricle

——→ Aorta

• Structure of Heart.

Brief Explanation of Working:

All deoxygenated blood enters
through right side —→ Vena Cava &
is passed to right ventricle via
Tricuspid valve. From here, pulmonary
~~artery~~ vein carries it to Lungs,
where it is oxygenated to return
back to left chamber via the
Venal Artery. Finally, Aorta
carries oxygenated blood to body.

ROLE OF BLOOD VESSELS:

THREE
TYPES
(core of
circulatory
system)

→ **Artery:** carry deoxygenated blood from body to heart.
- Highest BP.

→ **Vein:** carry oxygenated blood from heart to body
- moderate BP.

→ **Capillary** carry both types of blood.
- extremely thin, exchange
- distributive role.

(b) CYCLONE.

A cyclone is essentially a storm formed over warm waters. It causes excess destruction.

Typhoon ← Alternate Names → Hurricane

↓

Tropical Cyclone
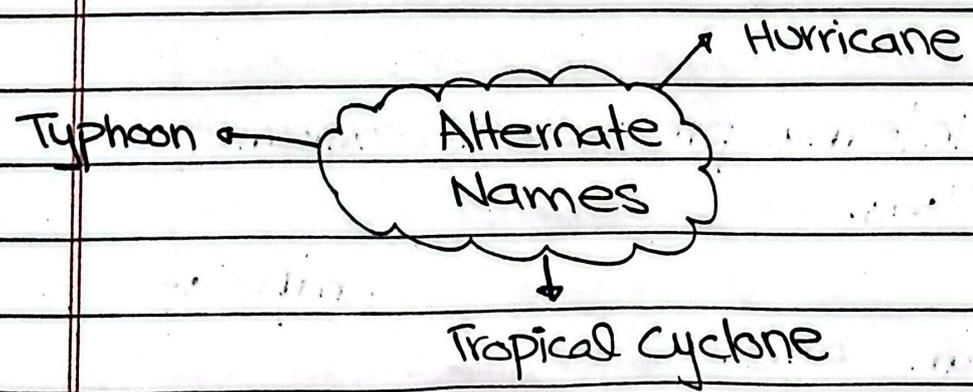
Depending upon geographical regions, names can vary.

- East/West USA : Hurricane
- Asia Pacific/Japan: Typhoon

Example:

- Hurricane Helen in USA
- Hurricane Sandy in USA.

FORMATION:

Tormenting winds

Eye of storm

high wave on coast.

sea.

land

Essentially extremely high sea-storms or thunderstorms are required to trigger cyclones. It forms a whirlwind of air above warm waters where **internal pressure is extremely low.** This forms a centre of cyclone to appear in **shape of an eye.** Such disaster brings

great destruction on land, in seas and coastal areas.

(c)
FUNCTIONS

CARBOHYDRATES:
- They provide energy.
- Enable proper mental functioning.

Proteins:
- Have structural and functional roles in cell membranes.
- Boost body/muscle strength and immunity.
- Enzymes that conduct metabolic processes are proteins.

Fats:
- Used to store Vitamin (A, B, E, K)
- Provide insulation to internal organs (lungs, heart)
- Used to extract oils, nutrients.

Calcium:

- Essential mineral for bone and teeth health.
- Enables body strength/growth.

Iron:

- Essential for growth.
- Important for skin hair
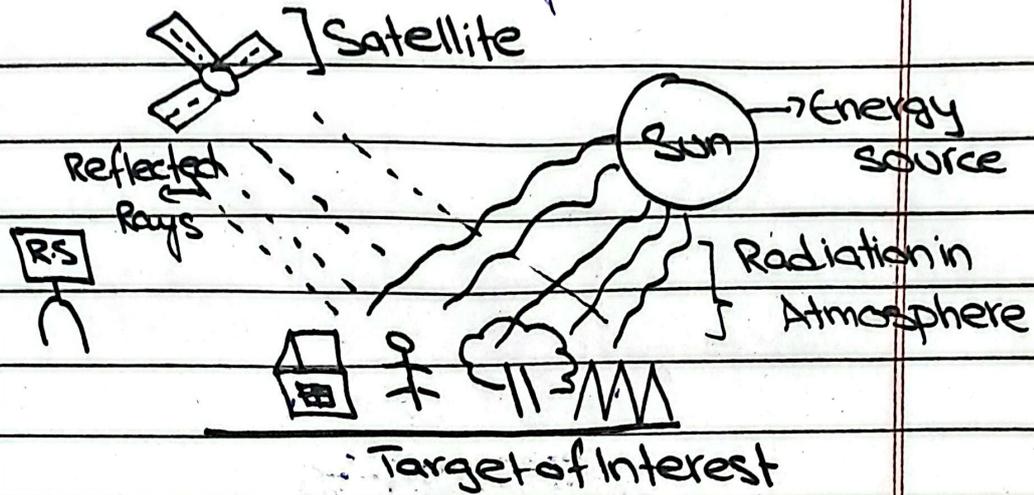- Ensures nutrient absorption in blood.

(d)
REMOTE SENSING

Remote Sensing Refers to the use of sensors carried via satellites to analyse and utilize land/settlements where human presence is not possible.

Elements:

- Sun/Source of Radiation/Energy
- Atmosphere
- Target of Interest.

- Sensor for data collection
- Unit for Analysis

- Remote Sensing

Environmental Purposes:

- Monitoring Pollution:

  We can use remote sensing to analyze SWM issues in far-flung region.

- Forest Cover Analysis:

  It enables to access rate of deforestation.

- Disaster Management:

  In case of floods landslide we can use remote sensors to monitor real-time situation. It can help

predict disasters too.

Example:

In case of Avalances, Remote sensors are used to ~~~~ loss of life. Dead body of Ali Sadpa was found using this technique.

SECTION-B

ANSWER: 7

(a)

Let the numbers be x and y.

According to given situation:

$$40\% \text{ of } x = \frac{40 \cdot (x)}{100}$$

$$= \frac{2x}{5}$$

So,

$$\frac{2x}{5} = \frac{2}{3} \cdot y$$

$$6x = 10y$$

$$\frac{x}{y} = \frac{10}{6}$$

$$\frac{x}{y} = \frac{5}{3}$$

Hence,

The ratio of the first number to second is 5:3.

$$x:y = 5:3$$

(5)

Given:

Price of 17 balls = 720 Rs.

Loss = cost price of 5 balls

Sale/Marked Price of 1 Ball =

$$= \frac{720}{17}$$

$$= 42.3 \text{ Rs.}$$

$$\begin{array}{r} 42.3 \\ 17\overline{)720} \\ 68 \\ \hline 40 \\ 34 \\ \hline 60 \\ 51 \\ \hline 9 \end{array}$$

$$-2 - 24 = y$$
$$y = -26.$$

(c)

Let,

Present age of man $= u$

Present age of son $= y$.

Acc. to given condition:

$$u = y + 24.$$

So, $\qquad y = u - 24. \qquad —(1)$

In two years:

$$u + 2 = 2(u - 24)$$
$$u + 2 = 2u - 48$$
$$u - 2u = -48 - 2$$
$$-u = -50$$
$$\boxed{u = 50}$$

Substituting 'u' in ①

$$y = u - 24$$
$$= 50 - 24$$
$$\boxed{y = 26 \text{ years}}$$

Present age of son is 26 years.

(D)

Rate of work of Rashid = $\dfrac{1}{6}$ hours

Rate of work of Kamran = $\dfrac{1}{5}$ hours

Together = $\dfrac{1}{6} + \dfrac{1}{5}$

$= \dfrac{1}{30}$ hours.

Work = 32 pages + 40 pages.

$= 72$ pages.

$\therefore$ Total pages = 110

Time required per page = $\dfrac{72 \ 30}{72}$

$= 2.4$ hours.

To do 110 pages =

$= 110 \times 2.4$

$= 264$ hours.
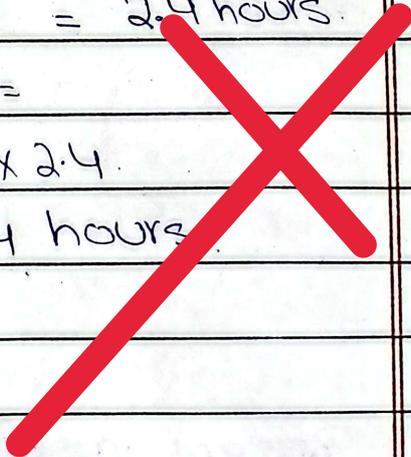
ANSWER:8

(A)

5 Houses:

A,B,C,D,E

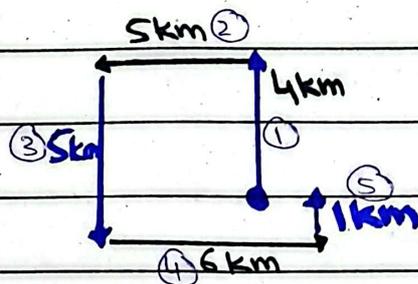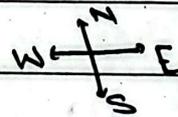Acc to given statement, the houses are in following order:

D,B,A,E,C

Therefore,

A,B and E are houses in the middle.

(B)

Figurative explanation of condition:

- I am at a displacement of 1km (Eastwards) from my starting point
- Distance covered:

= 4km + 5km + 5km + 5km + 1km

= 21 km ¦

- I will be running towards North upon finishing.

- After second turn, I will be running in Eastward direction.

- In order to reach my starting point from finishing point, I shall need to move 1 km in the eastward direction.

(C)

(a) SHIRT
(b) COAT
(c) BUSOLE.
(d) SKIRT
(e) SWEATER

(C) is odd one out.

(D)

The figure shows 24 Triangles.