GENERAL KNOWLEDGE-I
(GENERAL SCIENCE & ABILITY)

Roll Number

TIME ALLOWED: THREE HOURS	PART-I (MCQS)	MAXIMUM MARKS = 20
PART-I(MCQS): MAXIMUM 30 MINUTES	PART-II	MAXIMUM MARKS = 80

NOTE: (i) Part-II is to be attempted on the separate **Answer Book**.

(ii) Attempt Only **FOUR** questions from **Part II**, by selecting **TWO** questions from **EACH SECTION**. All questions carry Equal marks.

(iii) All the parts (if any) of each Question must be attempted at one place instead of at different places.

(iv) Candidate must write Q. No. in the Answer Book in accordance with Q. No. in the Q.Paper.

(v) No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.

(vi) Extra attempt of any question or any part of the attempted question will not be considered.

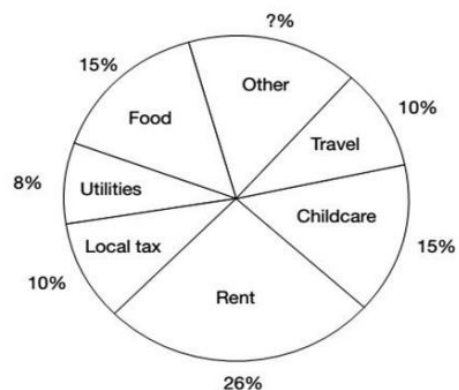**(vii)** Use of **Calculator** is **NOT** allowed.

PART-II
SECTION-I

Q. No. 2. **(A).** Describe different methods to estimate the age of the Universe. **(5)**

(B). Explain the formation of Lunar Eclipse. **(5)**

(C). Explain the terms Dark Energy and Dark Matter. **(5)**

(D). Define the term Black Hole. What's expected inside it? **(5) (20)**

Q. No. 3. **(A).** Describe different causes and preventions of 'Polio' **(5)**

(B). Define the term 'Bio-Fuel'. How is it helpful to promote clean energy? **(5)**

(C). Define 'Carbohydrates'. Describe different steps to digest these in the human body. **(5)**

(D). Describe the 'Cell Structure'. Write down at least three differences between an animal cell and plant cell. **(5) (20)**

Q. No. 4. **(A).** What is 'Acid Rain'.Describe its causes and how it can be prevented? **(5)**

(B). What is 'Water Pollution'. Discuss its causes and measurement methods. Name the countries with the highest and lowest percentage of it. **(5)**

(C). Write a comprehensive note on 'Smog'. **(5)**

(D). Describe different causes of 'Tsunami'. Is there any difference between a Tsunami and a tidal wave? Name the worst Tsunami ever recorded. **(5) (20)**

Q. No. 5. **(A).** Write a note, how data is stored on a 'Hard Disk'. **(5)**

(B). How an 'Optical Fiber' is constructed? How is it helpful in transmitting the electromagnetic radiations? **(5)**

(C). Write a comprehensive note on 'Balanced Diet'. **(5)**

(D). What is 'Artificial Intelligence'? How is it helpful for humanity? **(5) (20)**

SECTION-II

Q. No. 6. **(A).** It takes 3 liters of paint to cover an area of 24 square meters. What percentage **(5)** increase in the quantity of paint would be required to cover an area of 50.4 square meters?

(B). An automobile travels 3 km towards south, 4 km towards west, 5 km towards north **(5)** and 2 km towards south-east. How far is it from its starting position?

(C). Tahir started a business with a capital of Rs. 15,000. After 5 months Umar also joined **(5)** him with an investment of Rs. 30,000. At the start of 9th month, Usman joined them by investing Rs. 45,000. At the end of the year they earned a profit of Rs. 406,000. Find the share of each one.

(D). A man left his property of Rs. 640,000. A debt of Rs. 40,000 was due to him and Rs. **(5) (20)** 5,000 was spent on his burial. Distribute the amount between his widow, one daughter and two sons according to the Islamic Law.

Q. No. 7. The breakdown of average monthly expenditure for a family is given in the following Figure:

(A). Calculate from the figure what percentage of the family's expenditure is on 'other '? **(5)**

(B). Approximately what fraction of the family's monthly expenditure do' 'utilities', 'rent' and 'food' represent? **(5)**

(C). If the family spends Rs.11600 on utilities, how much is the family's total expenditure? **(5)**

(D). 'Other' expenditure comprises savings, entertainment and luxury items, which are spent in the ratio 3 : 4 : 1. Calculate how much the family saves each month if monthly income is Rs.24,000. **(5) (20)**

Q. No. 8. **(A).** Police officers are in pursuit of a stolen vehicle. Officer Baker is directly behind **(5)** the stolen car. Officer Lopez is behind Baker; Officer O'Malley is behind Lopez. Officer Reinhart is ahead of the stolen car and coming from the opposite direction. Officer Reinhart makes a U-turn and joins the pursuit. He pulls in behind Officer Lopez. Officer Baker pulls up on the driver's side of the stolen vehicle and Officer Lopez pulls up on the other side. Which officer is directly behind the vehicle?

(B). Define a Histogram. How is it constructed? What information may be deduced **(5)** from it?

(C). Look at this series: F2,__, D8, C16, B32, What number should fill the blank? **(5)**

(D). In a certain code language LANDMINE is written as PYRBQGRC. How will **(5) (20)** HOMEMADE be written in that code language?

****

Paper   GSA   CSS 2026
Time   three hours
CSS   2018

Part - 1
MCQ

(1) d ✗   (18) c ✓
(2) d ✓   (19) b ✗
(3) b ✓   (20) c ✗
(4) c ✓
(5) d ✓   13/20
(6) a ✓
(7) d ✓
(8) a ✓
(9) d ✗
(10) c ✓
(11) 6 ✓
(12) d ✓
(13) a ✓
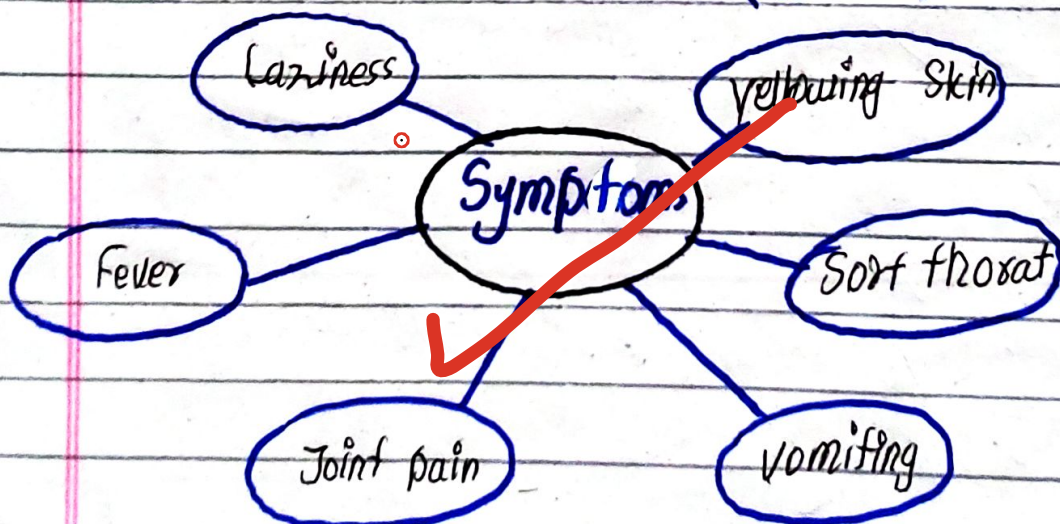(14) b ✓
(15) a ✗
(16) c ✗
(17) b ✗

Part - II

Section-I

Q. NO. 3

(a)

Polio

"Polio is highly infectious viral virus that spreads from contaiminated water, food and impacted person"

(WHO)

Laziness — Symptoms — yellowing Skin

Fever — Symptoms — Soft throat

Joint pain — vomiting

Causes of Polio

1. **Transmition through contaiminated food and water:**
   Contalminated food and water make a person vulnerable to boilo. According to **World Health Organization (WHO)**, People who use contaiminated food and water become the   target of boilo.

2. **Lack of sanitation:**
   Poilovirus is caused by lack of sanitation. For instance, individuals who do not wash hands after going to washrooms or those who goes to work and aviod cleaness become the victim of boilo.

3. **Contact with the affected person:**
   Contact with the blood or saliva of the affected person also causes poilovirus.

Preventions of Polio

1. **Awarness among the masses:**

   Promoting awarness among the masses is essential for prevention of polio. Governments with the cooperation of NGOs and Civil society should promote awa awarness through seminars about the causes and spread of poliovirus.

2. **Treatment and sanitation:**

   There are two types of vaccines — oral and infection. Individuals should vaccinate children orally. Also, they should takecare of sanitation.
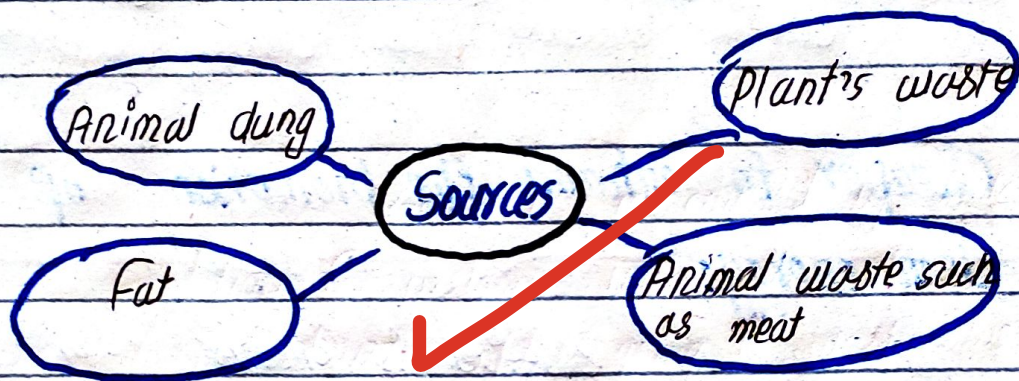
3. **Washing hands:**

   Individuals should be encouraged to wash hands and avoid the usage of contaminated food or water.

(b)

Bio-fuel

Bio-fuel refers to biological materials and waste. These are plant wastes, dung, animal waste and fat. These are used to produce energy.

Animal dung — Plant's waste

Sources

Fat — Animal waste such as meat

Sources of Bio-fuel

Helpful to promote clean energy

(I) Evironment friendly:
Bio-fuel is evironmentally great,

It does not polluate the environment like non-renewable energy. In this regard, Bio-fuel promote a clean energy.

(2.) Renewable in its form:

Bio-fuel is a renewable energy like wind, solar, hydro and nuclear energy. It does not harm the environment like fossile fuel. Thus, it promotes clean energy.

3. Cheaper to enhance the promotion of clean energy:

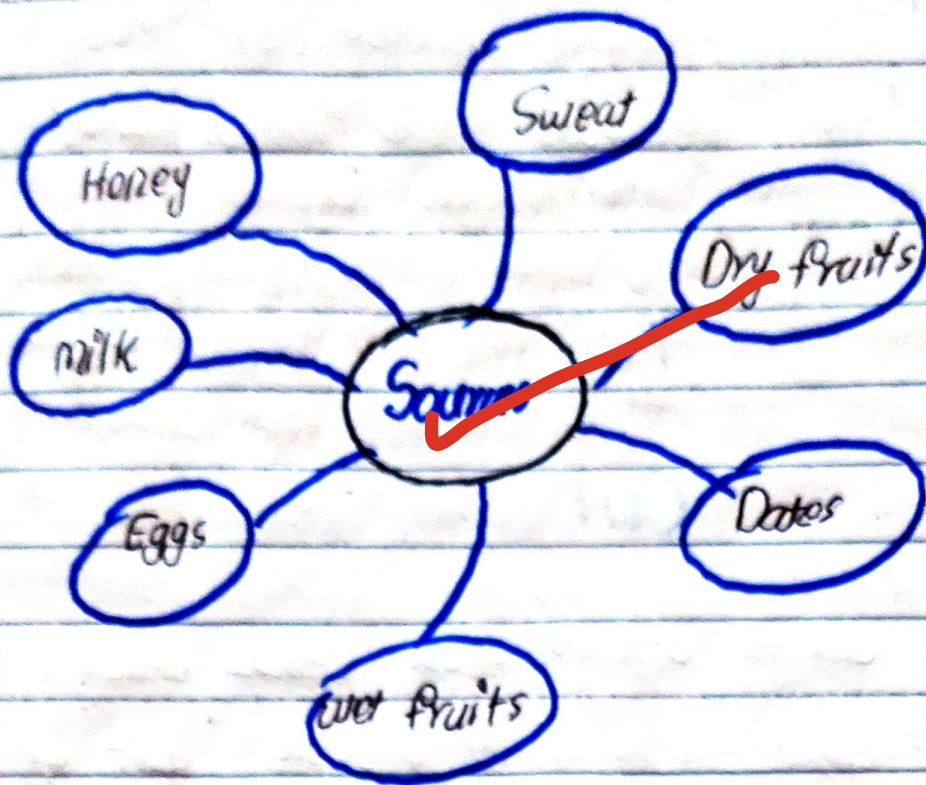Bio-fuel is cheaper than non-renewable energy. It promotes and supports clean energy easily.

discuss this in a bit more detail.....

(c)

Carbohydrates

Carbohydrate is also known as saccharides which means sugar. Carbohydrates refers to hydrated carbons. It is

one of the main source of energy.

Steps to digest in human body

1. **Mouth (Oral cavity)**

   In the mouth breakdown of the carbhydrates starts. Carbhydrates are processed, brokendown chemically (Enzyme) and mechanically.

2. **Stomach**

   After mechanical and enzymatic process of Carbhydrate (g glucose). It goes
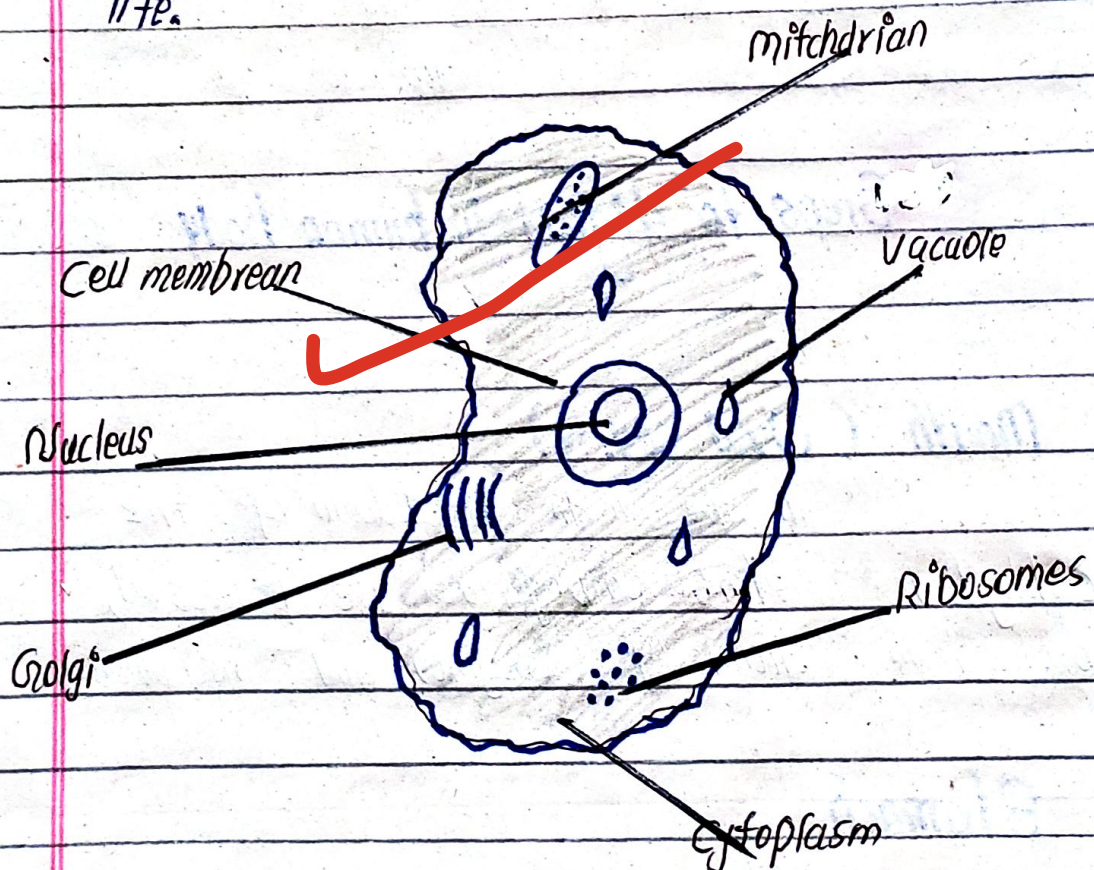
into stomach for consumention

3. **Absorption in blood:**

Finally, gulcose of the carbohydrate absorbed into mainstream of blood.

(d)

Cell

Cell is drieved from Cellula which means small room. If is a basic unit of life.

Structure of animal cell

Animal Cell	Plant cell
• Small vacuoles across the cell	Large vacuole in the center of the cell
• No cell wall	Cell wall, if has
• x i Nucleus in the center of the cell	Not located in the center

add more points....

Difference between animal and plant cell.

___

Q.NO.4
(a)

Acid rain
"Rain with high acidity is known as acid rain"
(UNESCO)

Causes of acid rain
There are numerous causes of

acid rain.

1. Sulfur Oxide (SO_2)

Sulfur Oxide (SO_2) is one of the main factors behind acid rain. It is being produced by burning of fossile fuels in industries and transportations. Thus, the emission of Sulfur Oxide (SO_2) causes acid rain.

2. Nitrogen Oxide (NOx)

Nitrogen Oxide enormously contributes to the happening of acid rain. It is also produced through emission of non-renewable energy resources.

Prevention of acid rain

1. Shifting info renewable resources:

Shifting into clean energy such as wind, solar, hydro and Bio-fuel is the only way to prevent acid rain.

2. **Reducing private transport:**

There should be awarness among the masses about the advantages of public transport. Shift into public transport has the capability to prevent the chances of acidity.

3. **Promotion of awarness about the emission of dangerous gases:**

There should be proper awarness about the threats of dangerous gases such as CO_2, SO_2 and NOX. These gases are produced by the processes of industries and transportations. Thus, individuals must be taught about the threats of these gases.

3.5

(b)

Water pollution

"Water pollution refers physical and chemical change in the quality of the water"

(UN Water Council)

Causes of water pollution

1. **Chemical waste of industries:**
   Industries across the globe spill waste into water bodies such as lake, stream and Ocean. The dangerous chemical wastage of _____ industries harm the physical and chemical quality of water.

2. **Agricultural waste:**
   Fertilizers and pesticides always harm the soil and water bodies near farms.

3. **Hospital waste management:**
   Hospitals waste such as syringe, bottles, putties, plastic gloves, drips and garbages always destory the physical quality of water.

Measurement methods

(physical quality) (chemical) (Nature of water)

Countries with highest and lowest percentage of water pollution

1. India is the highest in water pollution, according to **WHO**
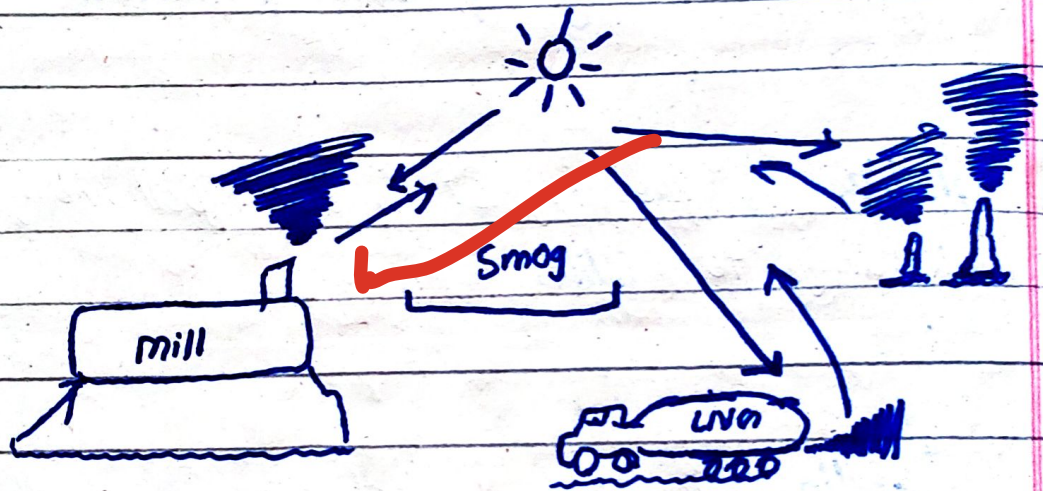
2. Sweden is the lowest in water pollution.

(c)

Smog

Smog is the combination with fog that reduces visuability. It is air pollution caused by the re-action of sun heat.

Causes of Smog

Burning of fossile fuels such as coal, Oil and gas result in the emission of SO_2, CO_2 and NOx. These gases when released in environment cause smog due to the heat of sun rays.

Process of smong formation

Impacts and Solutions

Smog causes accidents on roads, highways and runways. It brings loss of human lives. It can be prevented through reducing over reliance on the non-renewable energy resources

d

Tsunami

Tsunami is a Japanse word. Tsu means ocean and nami refers to wave. Tsunami is a disaster that is caused by earthquake in the ocean.

Causes of Tsunami

1. **Earthquake under the floor of Ocean.**
   many earthquakes happen deep underground of the oceans that cause tsunamies.

2. **Volcanic eruption in oceans:**
   Volcanic activities deep underground generate tsunami.

3. **Nuclear experiements:**
   Countries test their warheads deep underground of

the Oceans that cause tusnami.

Tidal wave

Tidal wave is caused by the Oceanic currents and it is normal activity.

Tusnami

Tusnami is one of the serious activities caused by earth quake and Volcanic eruption.

3.5

Worst Tsunami

✡ Japan 2010 / 200000 deaths

_____

Section-II

Q. NO. 8

(c)

F 2, E4 , D8, C16, B32

E4

explain the logic behind these answers in the form of statements.

3

(d)

LANDMINE ——o——→ PYRBQGRC

HOMEMADE ———————→ LMGCQYHC
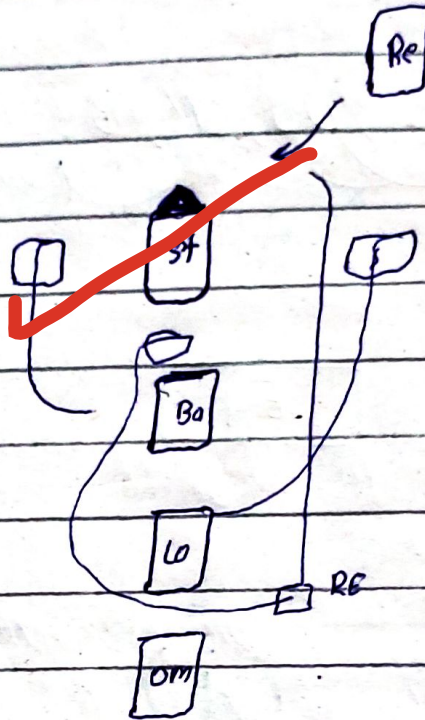
4f / 4f / 4f / 4f
2b   2b   2b

Homemade can be coded as LMGCCQYHC because first Alphebit is 4 steps foward, 2 backward, again 4 step forward, 2 step backward so on and so forth

(a)

Sol:

Officer Reinhart is directly behind the vehicle because officer Baker and Lopez left place for him and now officer O'malley is behind Reinhart.

Officer Reinhart

Q.NO. 8

(c)

Ratio and partnership

Sol:

Tahir	15000	— 12 months
Umar	30000	— 7 months
Usman	45000	— 3 month

Finding capital amount

$15000 \times 12 = 180000$

$30000 \times 7 = 210000$

$45000 \times 3 = 135000$

Divide on common factor

$$T \quad \frac{180000}{15000} = 12 \qquad \frac{210000}{15000} = 14 \qquad \frac{135000}{15000} = 9$$

Summing ratios

$$12 + 14 + 9 = 35$$

Tahir $\dfrac{12}{35} \times 406000$

$11600 \times 12 = 139200$ / share of Tahir

Umar $\dfrac{14}{35} \times 406000$

$11600 \times 14 = 162400$ / share of Umar

Usman $\dfrac{9}{35} \times 406000$

$11600 \times 9 = 104400$ / Usman's share