

CHAPTER-6 (OPERATIONS ON SETS; VENN DIAGRAMS)

Union of sets

The *union* of two sets A and B , written as $A \cup B$ (read as 'A union B'), is the set consisting of all those elements which belong to either A or B or both.

Thus, $A \cup B = \{x \mid x \in A \text{ or } x \in B\}$.

For example :

- (i) If $A = \{a, b, c, d, e, f\}$ and $B = \{a, e, i, o, u\}$, then
 $A \cup B = \{a, b, c, d, e, f, i, o, u\}$.
- (ii) If $A = \{1, 5, 9\}$ and $B = \{0, 2, 4, 6, 8, 10\}$, then
 $A \cup B = \{1, 5, 9, 0, 2, 4, 6, 8, 10\}$.
- (iii) If $A = \{0, 3, 6, 9, 12, 15, 18, 21, 24\}$ and $B = \{6, 12, 18, 24\}$, then
 $A \cup B = \{0, 3, 6, 9, 12, 15, 18, 21, 24\} = A$.

Intersection of sets

The *intersection* of two sets A and B , written as $A \cap B$ (read as 'A intersection B'), is the set consisting of all those elements which belong to both A and B .

Thus, $A \cap B = \{x \mid x \in A \text{ and } x \in B\}$.

For example :

- (i) If $A = \{a, b, c, d, e, f\}$ and $B = \{a, e, i, o, u\}$, then
 $A \cap B = \{a, e\}$.
- (ii) If $A = \{1, 5, 9\}$ and $B = \{0, 2, 4, 6, 8, 10\}$, then
 $A \cap B = \phi$.
- (iii) If $A = \{0, 3, 6, 9, 12, 15, 18, 21, 24\}$ and $B = \{6, 12, 18, 24\}$, then
 $A \cap B = \{6, 12, 18, 24\} = B$.

Difference of two sets

If A and B be two sets, then $A - B$ is the set consisting of all those elements which belong to A but do not belong to B .

Thus, $A - B = \{x \mid x \in A \text{ and } x \notin B\}$.

Similarly, $B - A = \{x \mid x \in B \text{ and } x \notin A\}$.

Note that $A - B$ is the set consisting of elements of A **only** and $B - A$ is the set consisting of elements of B **only**.

For example :

(i) If $A = \{a, b, c, d, e, f\}$ and $B = \{a, e, i, o, u\}$, then

$A - B = \{b, c, d, f\}$ and $B - A = \{i, o, u\}$.

Note that $A - B \neq B - A$.

(ii) If $A = \{1, 5, 9\}$ and $B = \{0, 2, 4, 6, 8, 10\}$, then

$A - B = \{1, 5, 9\}$ and $B - A = \{0, 2, 4, 6, 8, 10\} = B$.

(iii) If $A = \{0, 3, 6, 9, 12, 15, 18, 21, 24\}$ and $B = \{6, 12, 18, 24\}$, then

$A - B = \{0, 3, 9, 15, 21\}$ and $B - A = \phi$.

Complement of a set

If ξ is the universal set and A is any set, then the **complement** of A , denoted by A' or \bar{A} or A^c (read as 'complement of A '), is the set consisting of all those elements of ξ which do not belong to A .

Thus, $A' = \{x \mid x \in \xi \text{ and } x \notin A\}$.

Note that $A' = \xi - A$.

For example :

(i) If $A = \{1, 3, 5, 7, 9\}$ and $\xi = \{1, 2, 3, \dots, 10\}$, then

$A' = \{2, 4, 6, 8, 10\}$.

(ii) If $A = \{a, b, c, d, e, f\}$ and $\xi = \{\text{letters of English alphabet}\}$, then

$A' = \{\text{last twenty letters of English alphabet}\}$.

(iii) If $A = \{\text{January, June, July}\}$ and $\xi = \{\text{months of a year}\}$, then

$A' = \{\text{months of a year which do not begin with letter 'J'}\}$.

Overlapping (intersecting) sets

Two sets A and B are called **overlapping (intersecting or joint) sets** if they have at least one element in common. In other words, two sets A and B are overlapping sets if $A \cap B \neq \phi$.

For example :

(i) The sets $A = \{2, 3, 4, 5, 6\}$ and $B = \{0, 3, 6, 9\}$ are overlapping sets because they have elements 3 and 6 in common. Here, $A \cap B = \{3, 6\} \neq \phi$.

(ii) The set $P = \{a, e, i, o, u\}$ and $Q = \{a, b, c\}$ are joint sets because they have the element a in common. Here, $P \cap Q = \{a\} \neq \phi$.

(iii) The sets $A = \{1, 3, 5, 7, 9\}$ and $B = \{0, 1, 2, \dots, 10\}$ are overlapping sets because they have all the elements of A in common. Here, $A \cap B = A \neq \phi$.

Disjoint sets

Two sets A and B are called **disjoint** (or **non-overlapping**) sets if they have no element in common. In other words, two sets A and B are disjoint if $A \cap B = \phi$.

For example :

- (i) The sets $A = \{1, 3, 5, 7\}$ and $B = \{2, 4, 6, 8, 10\}$ are disjoint sets because they have no element in common. Here, $A \cap B = \phi$.
- (ii) The sets $\{\text{January, March, May}\}$ and $\{\text{Red, Blue}\}$ are disjoint sets because they have no element in common.

Some basic results about cardinal number :

- If A and B are finite sets, then
 - (i) $n(A \cup B) = n(A) + n(B) - n(A \cap B)$
 - (ii) $n(A - B) = n(A \cup B) - n(B) = n(A) - n(A \cap B)$
 - (iii) $n(B - A) = n(A \cup B) - n(A) = n(B) - n(A \cap B)$
 - (iv) $n(A \cup B) = n(A - B) + n(B - A) + n(A \cap B)$
- If ξ (universal set) is finite set and A is any set, then $n(A) + n(A') = n(\xi)$.

REMARKS

- * If A is any set, then
 - (i) $A \cup \phi = A, A \cup \xi = \xi, A \cup A = A$
 - (ii) $A \cap \phi = \phi, A \cap \xi = A, A \cap A = A$
- * $\xi' = \phi, \phi' = \xi$.
- * If A is any set, then $A \cup A' = \xi, A \cap A' = \phi$.
- * If A and B are any sets, then
 - (i) $A \cup B = B \cup A, A \cap B = B \cap A$ (Commutative laws)
 - (ii) $A \subset A \cup B, B \subset A \cup B, A \cup B \subset \xi$
 - (iii) $A \cap B \subset A, A \cap B \subset B$
 - (iv) $A - B = A \cap B', B - A = B \cap A'$
 - (v) $(A \cup B)' = A' \cap B', (A \cap B)' = A' \cup B'$ (De Morgan's laws)
- * If A and B are two sets, then
 - (i) A and B are disjoint sets if and only if $A \cap B = \phi$
 - (ii) A and B are overlapping sets if and only if $A \cap B \neq \phi$.

Example 1. If $A = \{3, 6, 9, 12, 15, 18, 21, 24\}$, $B = \{0, 4, 8, 12, 16, 20, 24\}$ and $C = \{0, 5, 10, 15, 20, 25\}$, then find

- (i) $A \cup B$ (ii) $A \cap B$ (iii) $B \cup C$
(iv) $B \cap C$ (v) $A \cup C$ (vi) $A \cap C$.

Also find the cardinal numbers of $A \cap B$, $B \cup C$ and $A \cap C$.

Solution. Given $A = \{3, 6, 9, 12, 15, 18, 21, 24\}$, $B = \{0, 4, 8, 12, 16, 20, 24\}$ and $C = \{0, 5, 10, 15, 20, 25\}$.

- (i) $A \cup B = \{3, 6, 9, 12, 15, 18, 21, 24, 0, 4, 8, 16, 20\}$
(ii) $A \cap B = \{12, 24\}$
(iii) $B \cup C = \{0, 4, 8, 12, 16, 20, 24, 5, 10, 15, 25\}$
(iv) $B \cap C = \{0, 20\}$
(v) $A \cup C = \{3, 6, 9, 12, 15, 18, 21, 24, 0, 5, 10, 20, 25\}$
(vi) $A \cap C = \{15\}$.

As $A \cap B$ has 2 element, $n(A \cap B) = 2$.

As $B \cup C$ has 11 elements, $n(B \cup C) = 11$.

As $A \cap C$ has only one element, $n(A \cap C) = 1$.

Example 2. If $\xi = \{\text{all digits in our number system}\}$ and $A = \{3, 4, 5, 8\}$, then find the complement of A .

Solution. Given $\xi = \{\text{all digits in our number system}\}$

$$\therefore \xi = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$$

Also $A = \{3, 4, 5, 8\}$

$$\therefore \text{Complement of } A = A' = \{0, 1, 2, 6, 7, 9\}.$$

Write the given set ξ in roster form

Example 3. If $A = \{\text{factors of } 24\}$ and $B = \{\text{factors of } 36\}$, then find

- (i) $A \cup B$ (ii) $A \cap B$ (iii) $A - B$ (iv) $B - A$.

Solution. The given sets in the roster form are :

$$A = \{1, 2, 3, 4, 6, 8, 12, 24\} \text{ and } B = \{1, 2, 3, 4, 6, 9, 12, 18, 36\}$$

- (i) $A \cup B = \{1, 2, 3, 4, 6, 8, 12, 24, 9, 18, 36\}$
(ii) $A \cap B = \{1, 2, 3, 4, 6, 12\}$ (iii) $A - B = \{8, 24\}$ (iv) $B - A = \{9, 18, 36\}$.

Example 4. If $A = \{\text{letters of SECUNDRABAD}\}$ and $B = \{\text{letters of BENGALURU}\}$, then find
 (i) $A \cup B$ (ii) $A \cap B$ (iii) $A - B$ (iv) $B - A$.

Also verify that :

- (a) $n(A \cup B) = n(A) + n(B) - n(A \cap B)$
 (b) $n(A - B) = n(A \cup B) - n(B)$
 (c) $n(B - A) = n(B) - n(A \cap B)$
 (d) $n(A - B) + n(B - A) + n(A \cap B) = n(A \cup B)$.

Solution. The given sets in the roster form are :

$A = \{S, E, C, U, N, D, R, A, B\}$ and $B = \{B, E, N, G, A, L, U, R\}$

- (i) $A \cup B = \{S, E, C, U, N, D, R, A, B, G, L\}$.
 (ii) $A \cap B = \{E, U, N, R, A, B\}$.
 (iii) $A - B = \{S, C, D\}$.
 (iv) $B - A = \{G, L\}$.

Write each element of the set once and only once

Verification

Here $n(A) = 9$, $n(B) = 8$, $n(A \cup B) = 11$, $n(A \cap B) = 6$,
 $n(A - B) = 3$ and $n(B - A) = 2$. Therefore,

- (a) $n(A) + n(B) - n(A \cap B) = 9 + 8 - 6 = 11 = n(A \cup B)$
 (b) $n(A \cup B) - n(B) = 11 - 8 = 3 = n(A - B)$
 (c) $n(B) - n(A \cap B) = 8 - 6 = 2 = n(B - A)$
 (d) $n(A - B) + n(B - A) + n(A \cap B) = 3 + 2 + 6 = 11 = n(A \cup B)$.

prime, $B = \{x : x \text{ is a factor of}$

Example 5. If $\xi = \{\text{all digits in our number system}\}$, $A = \{x : x \text{ is prime}\}$, $B = \{x : x \text{ is a factor of } 18\}$ and $C = \{\text{multiples of } 3\}$, then verify the following :

- (i) $(A \cup B)' = A' \cap B'$ (ii) $(A \cap B)' = A' \cup B'$
 (iii) $A - C \neq C - A$ (iv) $A - B = A \cap B'$.

Solution. Here $\xi = \{0, 1, 2, \dots, 9\}$

$A = \{2, 3, 5, 7\}$, $B = \{1, 2, 3, 6, 9\}$ and $C = \{0, 3, 6, 9\}$.

(i) $A \cup B = \{1, 2, 3, 5, 6, 7, 9\}$

$\therefore (A \cup B)' = \{0, 4, 8\}$

Also, $A' = \{0, 1, 4, 6, 8, 9\}$ and $B' = \{0, 4, 5, 7, 8\}$

$\therefore A' \cap B' = \{0, 4, 8\}$

Hence, $(A \cup B)' = A' \cap B'$.

(ii) $A \cap B = \{2, 3\}$

$\therefore (A \cap B)' = \{0, 1, 4, 5, 6, 7, 8, 9\}$

Also $A' \cup B' = \{0, 1, 4, 6, 8, 9\} \cup \{0, 4, 5, 7, 8\}$

$= \{0, 1, 4, 6, 8, 9, 5, 7\}$

Hence, $(A \cap B)' = A' \cup B'$.

(iii) $A - C = \{2, 5, 7\}$ and $C - A = \{0, 3, 9\}$

Hence, $A - C \neq C - A$.

(iv) $A - B = \{5, 7\}$,

$A \cap B' = \{2, 3, 5, 7\} \cap \{0, 4, 5, 7, 8\} = \{5, 7\}$

Hence, $A - B = A \cap B'$.

A, B, C are subsets of ξ . Choose members of A, B and C from ξ

Example 6. If $n(A) = 16$, $n(B) = 13$ and $n(A \cup B) = 22$, then find $n(A \cap B)$.

Solution. We know that

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

$$\Rightarrow 22 = 16 + 13 - n(A \cap B)$$

$$\Rightarrow n(A \cap B) = 16 + 13 - 22$$

$$\Rightarrow n(A \cap B) = 7.$$

Example 7. If $n(\xi) = 30$, $n(A') = 14$, $n(B) = 20$ and $n(A \cap B) = 11$, then find

(i) $n(B')$ (ii) $n(A \cup B)$.

Solution. (i) We know that $n(B') = n(\xi) - n(B)$

$$\Rightarrow n(B') = 30 - 20 = 10.$$

(ii) We know that $n(A') = n(\xi) - n(A)$

$$\Rightarrow 14 = 30 - n(A)$$

$$\Rightarrow n(A) = 30 - 14 = 16.$$

Also we know that $n(A \cup B) = n(A) + n(B) - n(A \cap B)$

$$\Rightarrow n(A \cup B) = 16 + 20 - 11 = 25.$$

Example 8. If $n(\xi) = 40$, $n(A) = 25$, $n(B) = 12$ and $n((A \cup B)') = 8$, find

(i) $n(A \cup B)$ (ii) $n(A \cap B)$ (iii) $n(A - B)$.

Solution. (i) We know that $n(A \cup B) + n((A \cup B)') = n(\xi)$

$$[\because n(A) + n(A') = n(\xi)]$$

$$\Rightarrow n(A \cup B) + 8 = 40$$

$$\Rightarrow n(A \cup B) = 40 - 8 = 32.$$

(ii) We know that $n(A \cup B) = n(A) + n(B) - n(A \cap B)$

$$\Rightarrow 32 = 25 + 12 - n(A \cap B)$$

$$\Rightarrow n(A \cap B) = 25 + 12 - 32 = 5.$$

(iii) We know that $n(A - B) = n(A) - n(A \cap B)$

$$\Rightarrow n(A - B) = 25 - 5 = 20.$$

Example 9. If $n(\xi) = 50$, $n(A) = 35$, $n(B) = 20$ and $n((A \cap B)') = 40$, find

(i) $n(A')$ (ii) $n(B')$ (iii) $n(A \cap B)$

(iv) $n(A \cup B)$ (v) $n((A \cup B)')$ (vi) $n(B - A)$.

Solution. (i) $n(A') = n(\xi) - n(A) = 50 - 35 = 15$

$$(ii) n(B') = n(\xi) - n(B) = 50 - 20 = 30$$

$$(iii) n(A \cap B) = n(\xi) - n((A \cap B)') = 50 - 40 = 10$$

$$(iv) n(A \cup B) = n(A) + n(B) - n(A \cap B) = 35 + 20 - 10 = 45$$

$$(v) n((A \cup B)') = n(\xi) - n(A \cup B) = 50 - 45 = 5$$

(vi) We know that $n(B - A) = n(A \cup B) - n(A)$

$$\Rightarrow n(B - A) = 45 - 35 = 10.$$

Example 10. If $n(A - B) = 15$, $n(B - A) = 10$ and $n(A \cap B) = 5$, find
(i) $n(A \cup B)$ (ii) $n(A)$ (iii) $n(B)$.

Solution. (i) We know that $n(A \cup B) = n(A - B) + n(B - A) + n(A \cap B)$
 $\Rightarrow n(A \cup B) = 15 + 10 + 5 = 30$

(ii) We know that $n(A - B) = n(A) - n(A \cap B)$
 $\Rightarrow 15 = n(A) - 5 \Rightarrow n(A) = 15 + 5 = 20$

(iii) We know that $n(B - A) = n(B) - n(A \cap B)$
 $\Rightarrow 10 = n(B) - 5 \Rightarrow n(B) = 10 + 5 = 15.$

Date: 09.05.2020

DREAMLAND SCHOOL

Class-VIII (Session-2020-21)

PHYSICAL EDUCATION

HOME WORK-3

YOGA

MORNING YOGA:-

Morning yoga is the most energizing, transcending, and enlightening experience. Once you make it a daily habit, you'll notice a wide variety of changes to your body, mind, and everything that makes you, you. For people with depression and anxiety, issues with healthy eating and other health problems may benefit from its healing properties.

Early Morning Yoga Regulates Your Sleep Rhythm

Once you make practicing yoga in the morning a habit, your body becomes accustomed to getting up at the same time each day. This means you will awake feeling more energized and alert. While practicing yoga, the attention to breathing, meditation, and Asana has a positive effect on the endocrine system, which is responsible for long-term body maintenance. The endocrine system uses glands and hormones, to help keep you balanced. Certain yoga poses stimulate the pineal gland which excretes the melatonin hormone that regulates sleep patterns. As you regulate your circadian sleep cycles, the feeling of confusion upon awakening from sleep (due to widely changing sleep times) starts to disappear.

Early Morning Yoga Helps to Build a Healthy, Consistent Routine-

Studies have shown that 90% of those who exercise regularly, as in more than three times a week, are morning practitioners. Having an established morning routine, encourages you to stick with it. Most of us live busy lives, and our time is valuable. It is understandably tough to fit in a yoga class during your busy day, and by the evening, things may come up that prevent you from practicing, or you're just feeling too tired. Doing your practice first thing in the morning provides outstanding relief. Just imagine having your yoga practice and your exercise completely done with before 8 am! The feeling of self-empowerment that comes from being disciplined in your routine, brings increased mental strength into other areas of your life as well. Early morning yoga can help to build a healthy, consistent routine to your yoga practice.

Early morning yoga may boost your metabolism-

Practicing yoga early in the morning will warm up your digestive system and help nutrients move more easily through the body, causing it to metabolize carbs and fats more quickly. We know how amazing twists can be for wringing out the digestive system and invigorating our vital organs. Practicing these Asanas first thing in the morning, can awaken our bellies, easing any morning aches and pains.

Early Morning Yoga is a Great Caffeine Alternative-

The specific type of breathing done during your early morning yoga practice, stimulates your entire body and mind. All of that fresh oxygen helps wake up the brain, and it can feel like a jolt of caffeine; yet unlike coffee or tea, the energy boost you feel from deep pranayama breathing lasts all day long! Early morning yoga helps you to feel more energized, yet grounded at the same time, thus helping you to accomplish more and be more productive during the day. Even on the days when I feel a little tired or less energy upon waking up, that certainly always changes after my hour long morning yoga practice. You start to feel alive, with clarity and purpose, and you go about your day with absolutely no caffeine required!

Morning stretching prevents injury and achiness throughout the day-

Yoga lengthens and stretches our tight bodies, preparing us for all movement throughout the day. For those of us that sit at a desk, yoga poses in the morning counter those hours we spend sedentary. Yoga increases spinal flexibility and encourages better posture. The poses we hold when we first wake up, will set our muscle memory into effect for standing taller and walking easier as the day progresses.

Supta Vajrasana:-(Lying Thunderbolt Posture)

Supta Vajrasana is a moderate level supine yoga posture that gives many benefits to the performer. As the name suggests, it belongs to the group of Vajrasana. Also, it resembles Matsasana except for the position of the legs.

Supta Vajrasana Steps

Step 1

Sit in Vajrasana. Bend back with the support of an elbow first and following the other elbow next. In this position, the elbow supports the body.

Step 2

Now bring back the head to the floor releasing the support of elbows. and lie on your back. Subsequently place the palms on the thighs.

Step 3

Next, bring the top of head towards the floor by making an arch on your back. Check the knees are still touching the floor.

Step 4

Breathe normally. Keep the position as long as it is comfortable.

Duration

Initially, 30 seconds to one minute is enough. One may extend the duration to five minutes. The duration should be increased gradually and one should not feel any discomfort in the final position.

Important Tip

One should release the pose in reverse order from Step 4 to Step 1. Earlier release of knees in the lying position may harm the knee joints.

Supta Vajrasana Benefits

By the practice of pose, One reaps all the benefits of Vajrasana and other benefits specific to this pose. Let us have a look at the important benefits.

- Reclined Thunderbolt Pose stretches and massages the abdominal region. Therefore, it improves the digestive system and removes constipation.
- This pose expands the upper chest region that envisages the increased flow oxygen into respiratory system. So it is good for Asthma and respiratory disorders.
- It stretches the lower spine that tones the spinal nerves and muscles in the region.
- Thigh muscles are stretched and toned. This improves the flexibility upper legs.



Click on the below link for SUPTAVAJRASANA video :-

<https://youtu.be/b3ZHxRdPjwM>

10TH HOME ASSIGNMENT – 2020-2021

CLASS –VIII SUBJECT – ENGLISH LANGUAGE

DATE – 09.05.20.

(SOLUTIONS TO THE EXERCISES OF CHAPTER- 5 ARTICLES DATE - 06.05.20 .)

HOME ASSIGNMENT

. Insert 'a' or 'an where required in the gaps in the following sentences . Put a 'x' mark where no article is required .

1. One of the ladies was wearing **an** evening dress .
2. Not many people read **x** poetry, but quite **a** few read **x** novels .
3. Please pass me **an** eraser, I have made **a** mistake .
4. I prefer **x** tea to **x** coffee.
5. He brought **an** iron and pressed **a** pair of trousers .
6. **X** glass, unlike water is **a** poor conductor of **x** electricity .
7. He has a glass of **x** fruit juice before **x** breakfast every morning .
8. In some countries **a** carpentry is not **an** occupation for **x** girl .
9. **X** people who have **a** little patience hardly succeed .
10. Today's world is **a** competitive one .
11. It is said that **x** God made **x** mothers because he could not be everywhere .
12. He is always complaining that he has **x** few clothes .
13. **X** little did they know of **x** danger . (**As we cannot insert 'the'**)
14. **A** little water was available after **x** drought . (**As we cannot insert 'the'**)
15. **A** Dr. John has applied for the post .

CHAPTER – 5 ARTICLES (CONTINUED)

Definite article 'THE' is used -

1. When the noun is known to the reader or the listener .
e.g. **The** letter we received is sent by my friend .
2. When there is only one in existence.
e.g. **The** sea covers a large part of Earth .
3. When the reader or listener knows which one is referred to .
e.g. **The** shop closes at six . (i.e. the one we are in, where I work ...etc.)
4. Before names of oceans, seas, rivers, deserts .
e.g. the Pacific; the Sahara; the Nile .
5. When the name of a country consists of an adjective + noun, the definite article is required unless the adjective is : north, South, East, West, Upper, Lower, Greater or

New. e.g. the United Kingdom, the United Arab Republicetc.

**NOTE : Four countries with one-word names take the definite article :
the Lebanon, the Congo, the Argentina, the Netherlands .**

6. When we refer to names of hotels, cinemas, theatres and ships .

e.g. He stays at the National Hotel .

They went to the Golcha last night to see an English film .

7. Before ordinal numbers which make the noun definite .

e.g. The first thing we must do is to take him to a doctor .

8. With superlative adjectives which make a noun definite .

e.g. He told me the latest news .

NOTE : When the word 'most' is used in the sense of 'very' or 'majority', it is not a superlative and does not require the definite article .

e.g. I have read most of the books you gave me .

I find his book most interesting .

9. With adjectives used as nouns .

e.g. The sick and the lame must be shown mercy .

10. 'Next' and 'last' normally particularise .

e.g. The next question is the last one in the list .

NOTE : 'The' is omitted when 'next' and 'last' refer to the period immediately before or after the present .

e.g. Jane got married last week, and Jim is getting married next week .

11. We use 'the' with a singular countable noun to represent a whole class of things .

e.g. The elephant lives longer than most animals .

12. With the names of most newspapers and magazines .

e.g. The Statesman, The Illustrated Weeklyetc.

13. Before the names of certain well-known books .

e.g. The Bible, the Mahabharata, the Adventure of Robinson Crusoe .

14. Before plural proper names, such as names of peoples (nations) and families .

e.g. The English are fond of adventure .

15. Before comparatives in constructions like -

e.g. The more it rains, the worse the roads will be .

16. Before certain expressions of time :-

e.g. in the morning, in the afternoon, on the previous day, the week before last, the week before next, on the previous morningetc.

DEFINITE ARTICLE (THE) IS OMITTED

1. Before most proper nouns

e.g. Sangita scored the highest percentage .

2. Before uncountable nouns

e.g. **Honesty** is the best policy .

3. Before a common noun in the singular used in a general sense .

e.g. **Man** is mortal .

4. Before plural countable nouns used in a general sense

e.g. **Computers** are used extensively in many workplaces .

5. Before names of meals used in a general sense

e.g. **Dinner** is served .

6. Before names of languages

e.g. They speak **Marathi** at home .

7. Before names of streets

e.g. There are many shops in **Chandni Chowk** .

8. Before titles and names

e.g. **Prince Charles** declared the Commonwealth Games open .

9. Before words like school, college, university, church, bed, hospital, prison except when they refer to as a definite place, building or object rather than to the normal activity that goes on there .

REPETITION OF ARTICLES

1. When two or more adjectives qualify the same noun, the article is used before the first adjective only; but when they qualify different nouns, the article is used before each adjective .

e.g. She bought a pink and blue dress .

(She bought one dress in two colours-pink and blue .)

But if the example says - She bought a pink dress and a blue dress .

(It means – She bought two dresses , one pink and the other blue .)

2. When two or more connected nouns refer to the same person or thing, the article is normally used before the first only; but when two or more connected nouns, refer to different persons or things, the article is used before each .

e.g. The painter and sculptor had come .

(There is only one person who is a painter as well as a sculptor .)

But if the example reads – The painter and the sculptor had come .

(It means – There are two different persons, one is a painter, the other is a sculptor .)

HOME ASSIGNMENT

EXERCISE 1. Insert the definite article where required in the following sentences . Put a 'x' mark where no article is needed .

1. _____ water available after the drought was given only to children .

2. _____ trees we planted _____ last year have developed thick branches .

3. It was on _____ fourth of _____ month that he arrived .

4. _____ longer he stays in _____ capital, _____ more money he spends .

5. _____ wounded were taken to _____ new hospital .
6. _____ oil is vital to _____ economy of many countries .
7. Some people doubt if _____ man wil ever be able to avoid _____ war .
8. _____ earlier everybody arrives, _____ sooner we can start .
9. _____ book he was reading was on _____ loan from _____ library .
10. _____ dress she was wearing last night was made of _____ silk .

EXERCISE 2. Give the difference in meaning between the sentences in each pair .

1. (a) I saw the poet and the statesman .
(b) I saw the poet and statesman .
2. (a) I bought an old dilapidated house .
(b) I bought an old and a dilapidated house .
3. (a) The Police inspecto has gone to the Old-Age Home .
(b) The old man has gone to Old-Age Home . .
4. (a) She studies in an English medium school .
(b) She studies in the English medium school .
5. (a) I went to a hospital .
(b) I went to the hospital of Mr. kapur .

Date: 09.05.2020

**COMPUTER (HOME ASSIGNMENT – 6)
CLASS – 8**

SOLUTION OF HOME ASSIGNMENT – 5

1. Write any three advantages and disadvantages of CUI and GUI.

Ans: - Three advantages of CUI are:-

- a) If the user knows the correct commands then this type of interface can be much faster than any other type of interface.
- b) This interface needs much less memory (RAM) in order to use compared to other types of interfaces.
- c) A low resolution, cheaper monitor can be used with this type of interface.

Three disadvantages of CUI are:-

- a) There are a large number of commands which need to be learned
- b) For someone who has never used a CUI, it can be very confusing.
- c) Commands have to be typed accurately. If there is a spelling mistake then the command will not respond or fail.

Three advantages of GUI are:-

- a) It is very easy to use by learner as it is user friendly and speed up the user's work.
- b) It looks very attractive and multi-colored.
- c) It is much better than the CUI (Character User Interface) which requires the user to memorize a lot of commands, syntaxes.

Three disadvantages of GUI are:-

- a) It uses more computer memory as the aim is to make it for user friendly and not resource optimized. As a result it can be slow on older machines.
- b) GUI based applications require more RAM in order to run.
- c) It uses more processing power compare to other interface types.

2. Differentiate between CUI and GUI.

Ans: - Difference between CUI and GUI:-

<u>GUI</u>	<u>CUI</u>
An interface that is commonly used to get connected to the computer.	Another interface that needs command prompts to connect to computer.
Much easier for navigation and use.	Hard to use and navigate.
It is the modern type of connection with graphics and images where the mouse can be used.	It is the older type of connection need to type the commands on the keyboard.
It is used by the newest computer models.	It is used by older computer models.
You can see graphics and other images when you need to give a special command on the computer.	You only see the command prompt and you have to memorize the commands all the time.

CHAPTER: 1 (OPERATING SYSTEM & GUI)

STUDY MATERIAL NO. – 1.6

4. Real-Time operating system:-

The real-time operating system used for a real-time application, means for those applications where data processing should be done in the fixed and small quantum of time. It is different from general purpose computer where time concept is not considered as much crucial as in Real-Time Operating System. These systems are commonly found and used in robotics, cameras, complex multimedia animation systems, and communications. RTOS is frequently used in cars, military, government systems, and other systems that need real-time results.

Operating system as an interpreter:-

An interpreter is a computer program, which converts each high-level program statement into the machine code. This includes source code, pre-compiled code, and scripts. Both compiler and interpreters do the same job which is converting higher level programming language to machine code.

An operating system acts as a translator (interpreter) to translate the high-level language program and creates an object code. While translating, if syntax errors are detected, appropriate messages are displayed.

CLASS – VIII
STUDY MATERIAL & HOME ASSIGNMENT [VI]
SUBJECT-BIOLOGY
CHAPTER-2 (REPRODUCTION IN PLANTS)

DT-09/05/2020

➤ **SOLUTION OF (ASSIGNMENT-IV) HW QUESTIONS : CHAPTER 2**

1. Write down the role of the following.

- a) Tuber – Tubers develop from either the stem or the root. Stem tubers swell from storing nutrients and get too large and produce a new plant. Stem tubers have eyes or nodes on them that can produce new shoot.
- b) Culture solution - culture solution is very important as, it is used for growing plant tissue because it contains various plant nutrients in the form of ‘jelly’ known as agar and plant hormones which are necessary for the growth of plant.
- c) Eye of potato - Eyes are nodes on them that can produce new shoot. The eyes often begin to sprout to new shoot when left for sometime.
- d) callus – Callus are mass of cells which eventually develops root and shoot in tissue culture medium.
- e) fleshy leaves of onion - Onion have an underground stem to which the fleshy leaves are attached. These leaves are capable of storing food.

f) Answer the following questions.

a) What are scion and stock?

Scion is a young shoot or twig of a plant, especially one cut for grafting.

Stock is root system of another plant which is selected for its roots part in grafting process.

b) Which process they are related to?

They are related to the process Grafting (vegetative propagation).

c) Show a diagram mentioning the above parts.

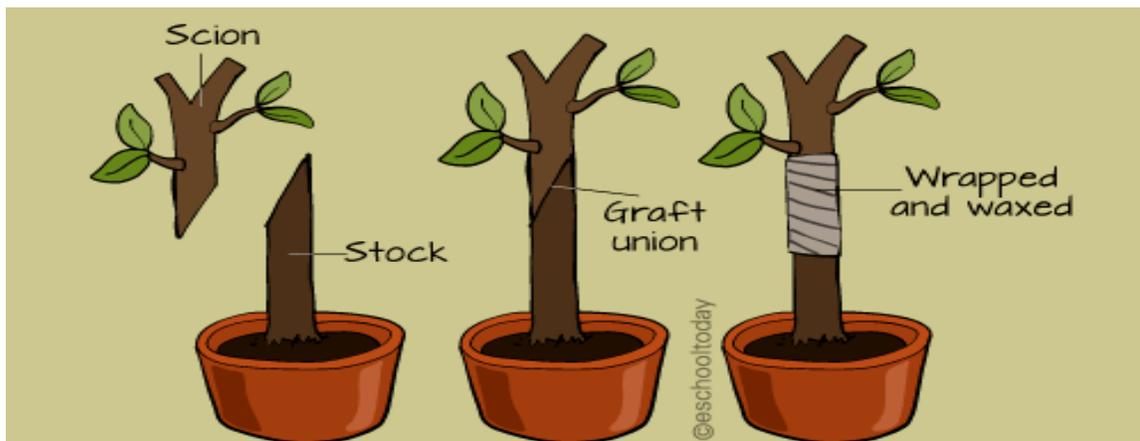


FIG : GRAFTING

g) Write down the disadvantages of the following.

a) Vegetative Propagation

Disadvantages of vegetative reproduction -

- Does not produce new variety.
- New plants are less adaptable to environment.
- The diseases of parent plants are transferred to off springs.
- Leads to overcrowding around the parent plant.
- Very little possibility of dispersal.

b) Tissue culture

Disadvantages of tissue culture

- Tissue Culture can require more labor.
- It costs more money.
- It is essential that, before being cultured, the material is screened. If there is any failure to pick up, any abnormalities could lead to the new plants being infected.
- While the success rate is high if the correct procedures are followed, success with the tissue culture is not a guarantee. There is still a chance that the process triggers a secondary metabolic chemical reaction, and the new explants or cells' growth gets stunted, or even die off.

h) Write a short note on importance of tissue culture

Importance of Tissue Culture -

1. Tissue culture is very important in biology due to its wide range of applications.
2. Both plant and animal tissues can be used for culturing. For eg., animal tissue culture helps in preserving an organ or tissue.
3. Plant tissue culture may be used for genetic modification of a plant or simply increase its yield. the cells of the plants can be genetically altered to produce plants with desirable characteristics.
4. This technique utilizes the plant's ability to rejuvenate the tissues rapidly. It produces exact copies of itself known as clones.
5. It is a technique of quickly producing plants without any tubers, seeds or bulbs.
6. It also helps in the conservation of plant biodiversity by the production of endangered plants.

i) Write one difference between Natural vegetative propagation and Artificial vegetative propagation.

Natural vegetative propagation	Artificial vegetative propagation
This occurs when plants grow and develop naturally without any human interference. Natural vegetative propagation can be enabled by the development of adventitious roots. Thus, new plants may emerge from the roots, stem and leaves of the parent plant	This is a type of vegetative reproduction carried out by humans on the fields and laboratories. the most common types of vegetative reproduction occurring artificially include: cutting, grafting, layering, tissue culture.

j) Match the following.

COLUMN A	COLUMN B
Bryophyllum	Vegetative propagation by leaves
Rhizome	Ginger
Callus	Tissue culture
Vegetative propagation by root raspberries.	Dahlia layering

➤ **SOLUTION OF (ASSIGNMENT-V) HW QUESTIONS : CHAPTER 2**

1. Give location of the following.

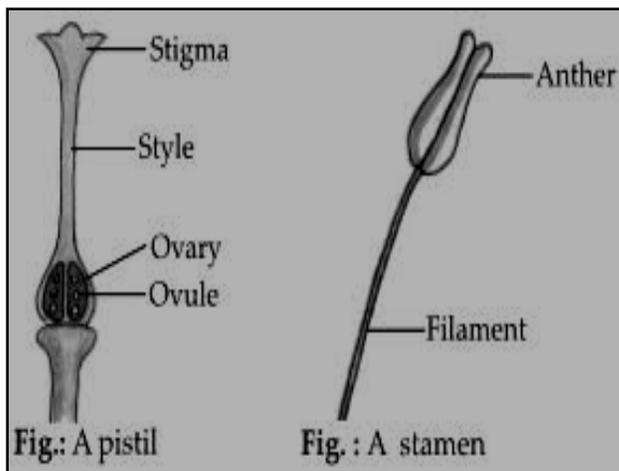
- Sepal – It is located in the first whorl named calyx of a flower.
- Pollen – It is located in the anther of stamen of androecium of a flower.
- Ovule – It is located in the ovary of gynoecium of a flower.
- Stamen – The male whorl androecium of a flower consists of stamen.
- Pistil – The female whorl gynoecium of a flower consists of pistil.

2. State whether the statements are true or false. Correct the false statements.

- The ovule develops into a fruit. – False
Correct statement – The ovule develops into seed.
- Filament is the thread like structure present in pistil. – False
Correct statement – Filament is a thread like structure present in stamen.
- Self-Pollination occurs when the pollen grains from the anther is deposited on the stigma of the same flower, or another flower on the same plant. - True
- The second male gamete fuses with ovule and forms the endosperm. – False
Correct statement – The second male gamete fuses with polar nuclei and forms endosperm.
- Style is a tubular structure that connects the ovary and the pollen tube. – False
Correct statement – Style is a tubular structure that connects the ovary and stigma.

3. The androecium consists of __stamen__ and the gynoecium consists of __pistil__.

Draw A and B and label different parts



4. What are the fate of the following parts after fertilization.
- Ovary - The ovary turns into the fruit after fertilization.
 - Ovule – The ovule turns into seed after fertilization.
 - Pollen tube – It disintegrates after fertilization.
5. Different parts of a flower are shown in the following diagram. Identify 1-11.

- ovary
- stigma
- style
- pistil or carpel
- anther
- filament
- stamen
- petal
- sepal
- ovule
- receptacle

6. a) Explain Two types of pollination.

There are two types of pollination:

Self-Pollination: This process occurs when the pollen grains from the anther is deposited on the stigma of the same flower, or another flower on the same plant.

Cross-Pollination: This process occurs when the pollen grains are transferred from the anther of one flower into the stigma of another flower of different plants of the same species.

- b) Name two non living agents of pollination and explain how do they carry out the same process by example of each.

Two non living agents of pollination are – wind and water.

- Wind:** Some plants produce light, dry pollen which gets carried by the wind. When they happen to fall on the stigma of a flower of the same kind, pollination occurs. Example: Maize, wheat, pine. These produce a large amount of pollen because of a high incidence of wastage. Wind-pollinated flowers are usually small, dull coloured but with long feathery anthers to enable pollen to be blown off easily.
- Water:** Male flowers get detached from the parent plant and are carried by water to other places. When they come in contact with a female flower, pollination occurs. Example: Vallisneria.

➤ **SOME MORE SOLVED QUESTIONS OF CHAPTER 2 –**
{LEARN AND PRACTISE}

1. **Select the correct alternative in the following statements:**

(a) Pollen is produced in the:

1. Filament
2. Style
3. Pistil
4. Anther

Answer: 4. Anther

(b) Reproductive whorls of a flower are:

1. Stamens and carpels
2. Sepals and petals
3. Sepals and stamens
4. Petals and carpels

Answer: 1. Stamens and carpels

(c) Grafting is a method of:

1. Artificial vegetative propagation
2. Sexual reproduction
3. Artificial pollination
4. Cross-pollination

Answer: 1. Artificial vegetative propagation

(d) Which one of the following is a false fruit?

1. Tomato
2. Apple
3. Potato
4. Pea

Answer: 2. Apple

2. Short answer questions.

a) Give two features of flowers which favour pollination by insects.

Specialities of insect-pollinated flowers:

- These flowers are large with coloured petals to attract insects.
- The smell of the flower attracts insects.

b) Name two characteristics of flowers in which pollination occur by wind.

Special features of wind-pollinated flowers:

- They produce light pollen so that it is easily carried away.
- A large amount of pollen is produced.

c) What is a 'false fruit'? Give one example:

The base of the flowers (thalamus) in false fruits becomes the main fleshy part of the fruit, while the ovary remains a small central part containing seeds. Example: Apple and Pear.

d) Briefly explain why a gardener prefers to grow certain plants vegetatively?

Gardener prefers to grow certain plants by the vegetative method. The advantages of doing so are as follows:

- In a shorter time, Reproduction by vegetative parts takes place.
- New plants, thus produced, spread very fast in a small area.
- It is a surer method.

- All the characters of the mother plant are retained by the daughter plants.

e) Imagine all the seeds happen to fall under the same plant and sprout into new plants. Mention any two problems that would be faced by new plants.

If all the seeds produced by a plant happen to fall under the same plant and sprout into new plants, the plant will face the following problems-

- A large number of plants will grow in small limited space. The water and minerals available to them in the soil will be limited.
- The air surrounding them will not be enough and less sunshine will be available to them. As a result most of the sprouted plants will die.

3. Find out the odd term and give reasons.

a) Budding, Cutting, Fission, Sporulation.

Odd term – cutting

Reason – Cutting is a process of vegetative propagation while rest are asexual reproduction process.

b) Anther, Filament, Pollen, Ovule

Odd term – Ovule

Reason – Ovule is part of pistil while rest are part of stamen.

c) Vallisneria, Maize, Wheat, Pine

Odd term – Vallisneria

Reason – Vallisneria is water pollinated plant while rest are wind pollinated plant.

d) Zygote, Spore, Embryo, Gamete

Odd term – Spore

Reason – Rest are terms related to fertilization while spore is not.

e) Scion, Graft union, bulb, Stock

Odd term – Bulb

Reason – Rest are the parts of the process grafting while bulb is not.

4. Mention the disadvantages of the following.

a) Asexual reproduction

Disadvantages of asexual reproduction

- New offspring may carry undesirable qualities from parents.
- Offspring may be unable to withstand changing environmental conditions.
- Faster maturity can cause overcrowding and stiff competition.
- Reduced strength and vigour of successive generations.

b) Sexual reproduction

Disadvantages of sexual reproduction

- Fusion is difficult if two individuals are isolated.
- Some variations may have undesirable qualities.
- Population growth is slow.

5. Give a schematic diagram mentioning the process of fertilization in flowering plant with a well labeled diagram.

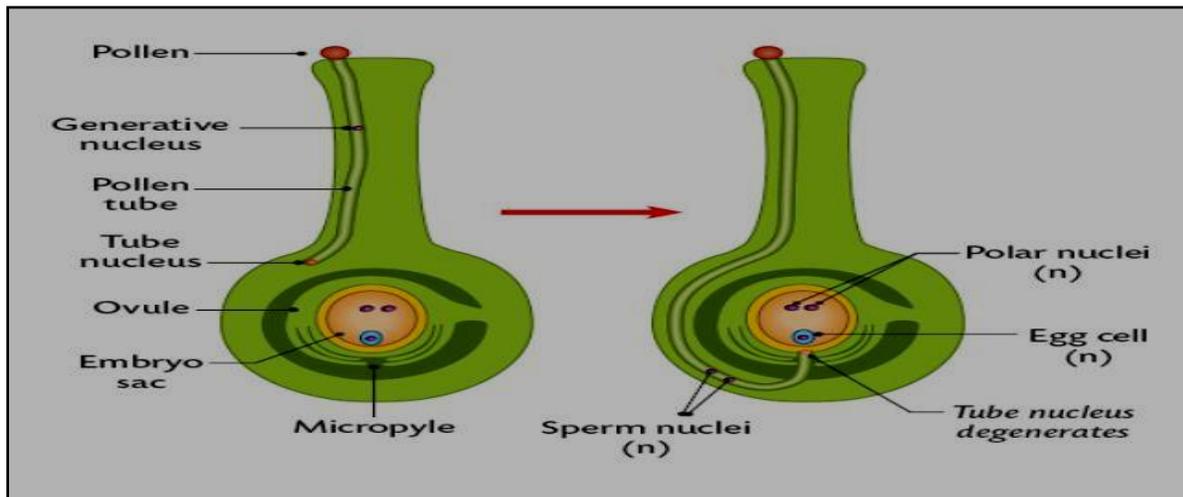
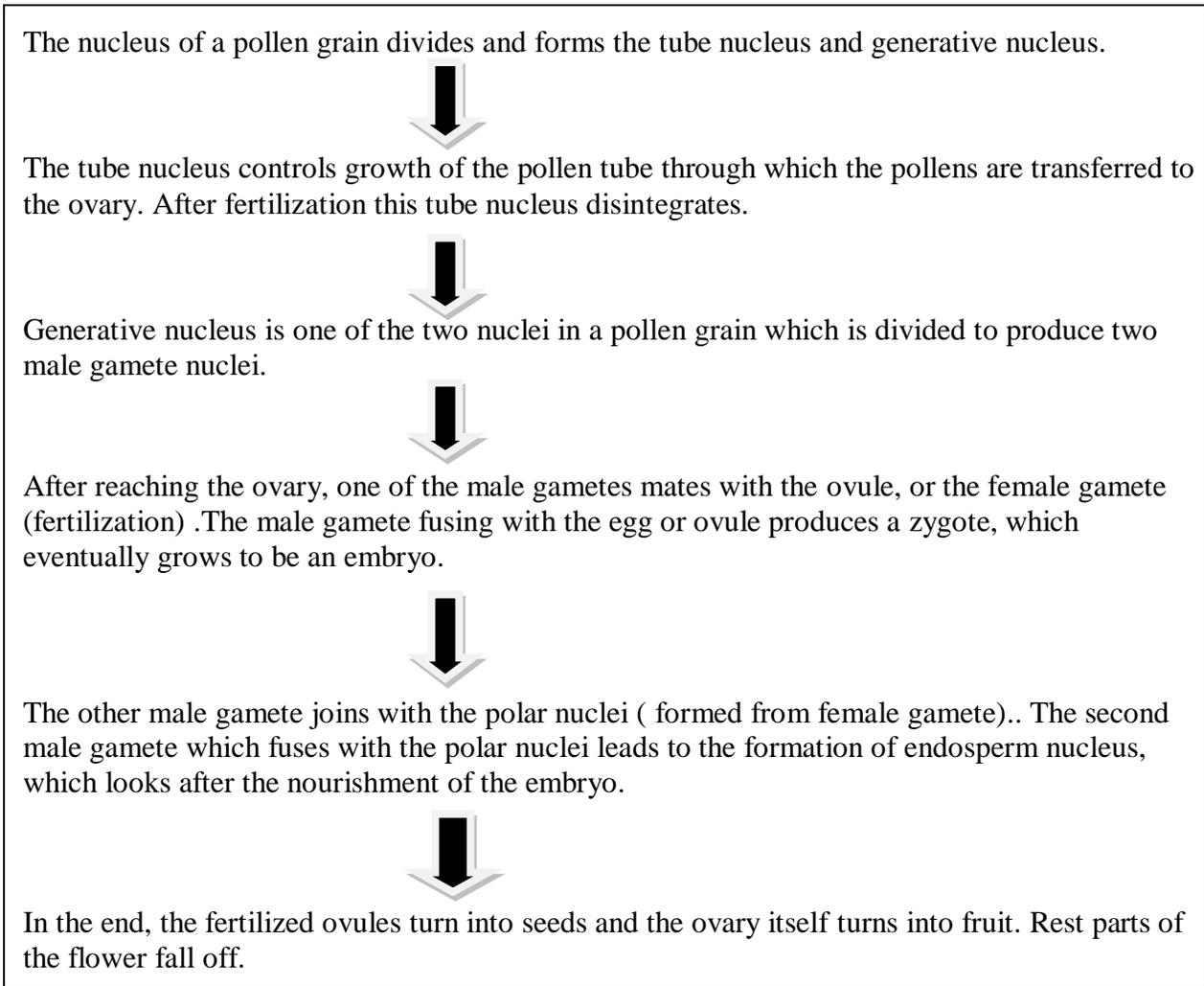


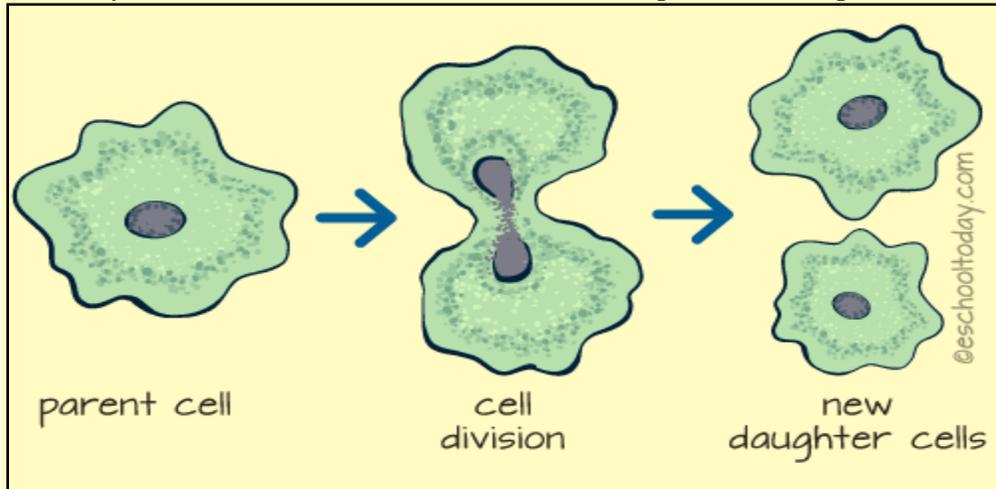
FIG : FERTILIZATION

6. Explain fission in plants with diagram.

Fission in simple terms is the splitting of a cell into two or more cells. Each small cell is known as a **daughter cell**.

Binary Fission

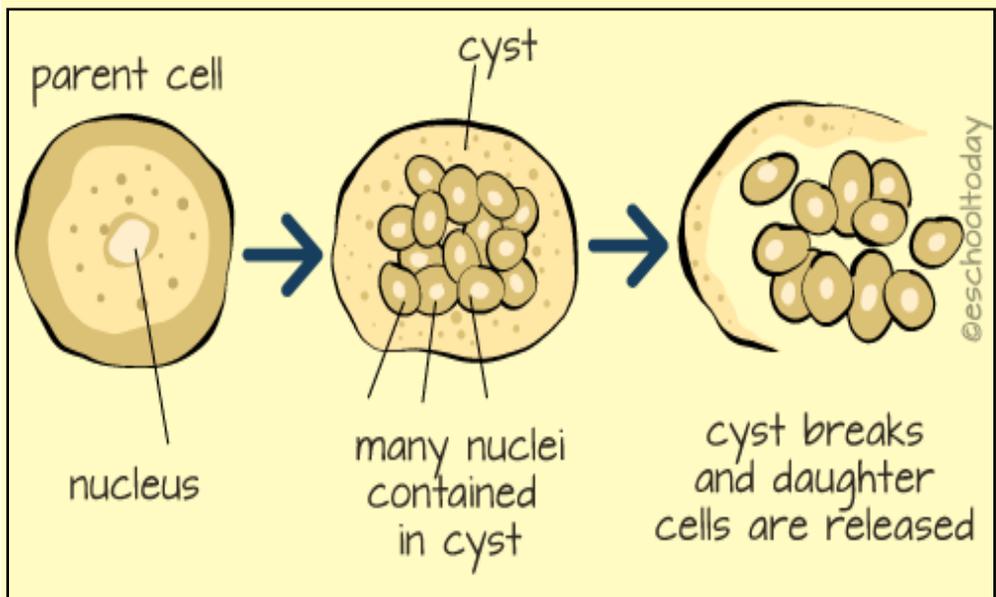
In Binary Fission, the cell divides itself into two, equal, identical parts with the same DNA.



Notice that binary fission starts with the nucleus dividing itself into two and move to opposite sides of the cell. After the cytoplasm constricts in the middle to split into two. The two new cells will have identical DNA.

Multiple Fission

In Multiple Fission, the cell divides into many cells.



In multiple fission, a protective covering called a cyst develops over the cell. The nucleus then divides itself into many more nuclei which becomes the core of many daughter cells contained in the cyst. As the cyst breaks, the daughter cells are released.

HOME ASSIGNMENT

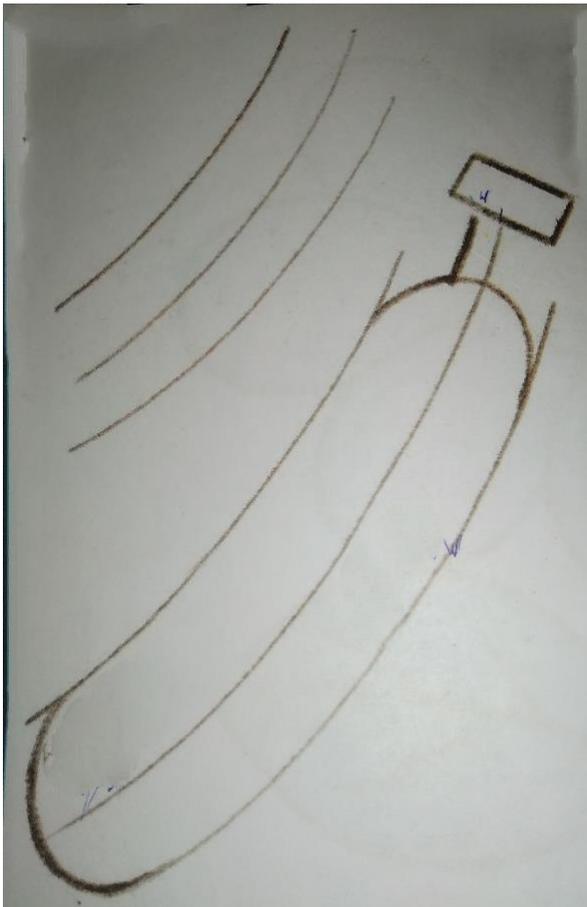
CLASS – VIII

SUBJECT – ART EDUCATION

DATE – 09.05.2020

Draw step by step and colour this two pictures:-

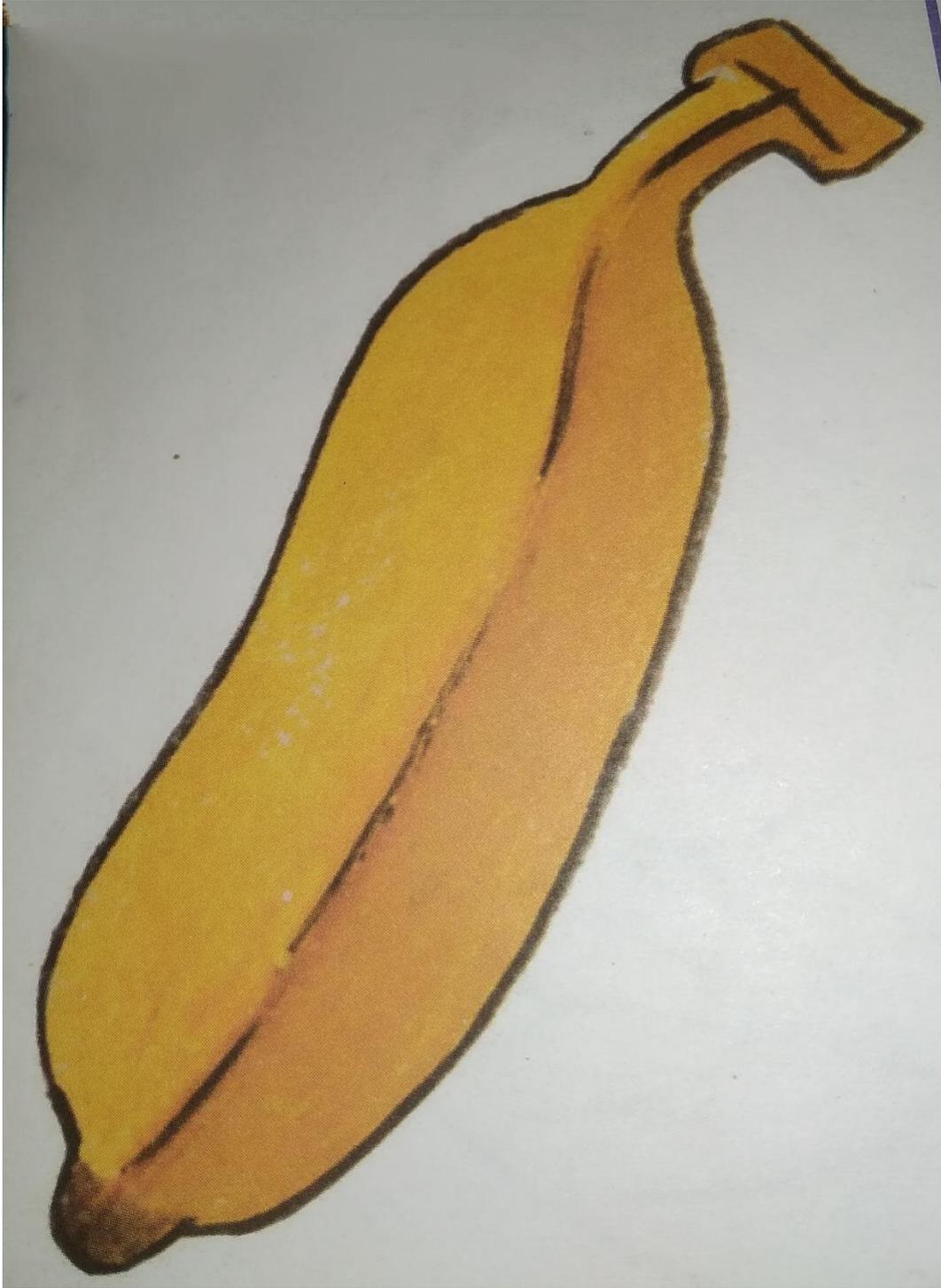
A.1.



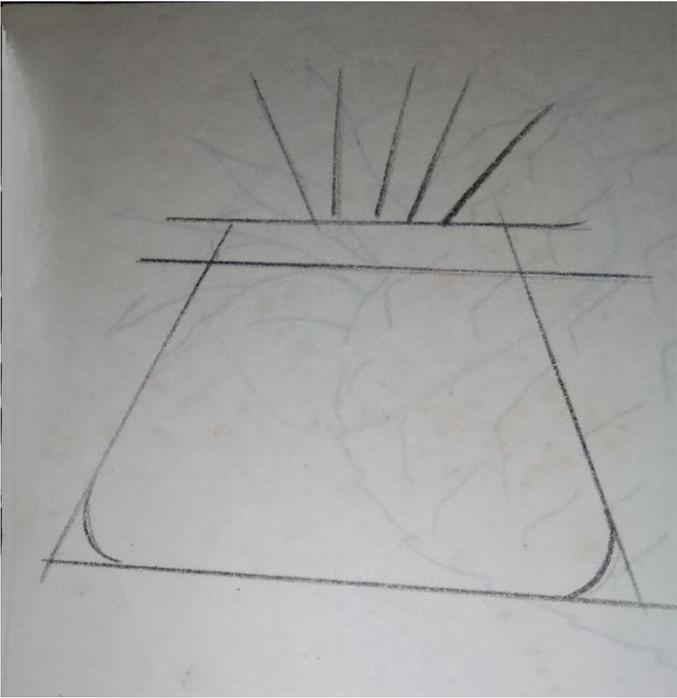
2



3.



B.1.



2.



3.



