ENGLISH – Rules for Conversion from Active to Passive Voice

Introduction:
In English grammar, sentences can be written in two different ways: Active Voice and Passive Voice.
In Active voice, the subject of the sentence performs the action. In Passive voice, the subject receives the action.
Examples:
- Active: The teacher teaches the students.
- Passive: The students are taught by the teacher.
General Rules:
1. Identify Subject, Verb, Object in the active sentence.
2. The object of the active sentence becomes the subject in the passive.
3. The verb is changed into 'be + past participle (V3)'.
4. The subject of the active sentence becomes the agent introduced by 'by'.
5. The tense of the verb remains unchanged.
6. If the subject is unknown, the agent can be omitted.
Rules According to Tense:
- Simple Present: She writes a letter → A letter is written by her.
- Present Continuous: He is reading a book → A book is being read by him.
- Present Perfect: They have completed the project → The project has been completed by them.
- Simple Past: Ram ate an apple → An apple was eaten by Ram.
- Past Continuous: She was cooking food → Food was being cooked by her.
- Past Perfect: They had solved the problem → The problem had been solved by them.
- Future: He will deliver a speech → A speech will be delivered by him.
- Modal: You can solve this question → This question can be solved by you.
Special Cases:
- Imperatives: Open the door → Let the door be opened.
- Interrogatives: Who wrote this book? → By whom was this book written?
- Negatives: She does not like coffee → Coffee is not liked by her.
When to Use Passive:
- When the doer is unknown: My wallet has been stolen.
- When the doer is unimportant: English is spoken all over the world.
- In scientific reports: The experiment was conducted in a lab.
Conclusion:
Mastering active-passive helps us write in different styles. Passive voice is widely used in formal writing where focus is on the action.

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MATHEMATICS – Theorems of Circle

Theorem 1: Angle in a semicircle is 90°.
Proof: If AB is diameter, then angle subtended at C is 90°.
Theorem 2: Equal chords subtend equal angles at the center.
Proof: If AB = CD, then ∠AOB = ∠COD.
Theorem 3: Perpendicular from the center to a chord bisects it.
Proof: Draw OM ■ AB, then AM = MB.
Theorem 4: Angles in the same segment are equal.
Proof: ∠ACB = ∠ADB.
Theorem 5: Opposite angles of a cyclic quadrilateral are supplementary.
Proof: ∠A + ∠C = 180°.
Theorem 6: Tangents from an external point are equal.
Proof: PA = PB, where PA and PB are tangents.
These theorems are useful in geometry and proofs of higher mathematics.
(Draw diagrams in notebook.)

SCIENCE – Flowchart of Metallurgy

Definition: Metallurgy is the science of extracting metals from their ores.
Steps:
1. Crushing & Grinding – Ore is crushed into powder.
2. Concentration of Ore – Removing gangue by hydraulic washing, froth flotation, or magnetic separation.
3. Conversion to Oxide – (a) Calcination: heating in absence of air. (b) Roasting: heating in presence of air.
4. Reduction – Reduction of metal oxide to metal using C, Al, or electrolysis.
5. Refining – Purification of crude metal. Example: electrolytic refining of copper.
Example Reactions:
$ZnCO_3 \rightarrow ZnO + CO_2$ (Calcination)
$2ZnS + 3O_2 \rightarrow 2ZnO + 2SO_2$ (Roasting)
$Fe_2O_3 + 2Al \rightarrow 2Fe + Al_2O_3$ (Displacement)
Flowchart: Ore → Concentration → Conversion to Oxide → Reduction → Refining → Pure Metal
Conclusion: Metallurgy is essential in industries like steel, aluminum, and electronics.

SST – Soil Erosion and Conservation

Definition: Soil erosion is the removal of the top fertile soil layer due to natural and human activities.
Causes:
Natural – wind, water, floods, drought.
Human – deforestation, mining, overgrazing, faulty farming practices.
Effects:
- Loss of fertility.
- Desertification.
- Reduced agricultural productivity.
- Floods and environmental imbalance.

Conservation Methods:
1. Afforestation – planting more trees.
2. Contour ploughing – ploughing along contour lines.
3. Terrace farming – steps on hill slopes.
4. Crop rotation – maintaining fertility.
5. Shelter belts – planting trees as wind barriers.
6. Controlled grazing – avoiding overgrazing.
7. Building bunds and dams – prevent water erosion.

Examples: Terrace farming in Himachal, shelter belts in Rajasthan, afforestation in Western Ghats.
Conclusion: Soil is a natural resource; its conservation is vital for sustainable agriculture and environment.

COMPUTER – Phishing

Definition: Phishing is a cybercrime where attackers trick people to reveal personal data like passwords, bank details.
How it Works:
Victims receive fake emails, SMS, or calls with links to fraudulent websites. When clicked, data is stolen.
Types of Phishing:
1. Email Phishing – fake bank or company emails.
2. Spear Phishing – targeted attack on an individual.
3. Smishing – phishing via SMS.
4. Vishing – phone call fraud.
5. Website Phishing – fake login websites.
6. Clone Phishing – duplicate of genuine messages with changes.
Examples:
- Fake KYC update links.
- Calls pretending to be bank officers asking for OTP.
- Emails claiming lottery or prize wins.
Prevention:
- Do not click unknown links.
- Check URLs (look for HTTPS).
- Use strong passwords and 2FA.
- Update antivirus software.
- Report suspicious activities.
Conclusion:
Phishing is increasing in the digital world. Awareness, careful browsing, and cyber-security practices can protect us.