

**UPSC Syllabus Topic: GS Paper 3 Science and Technology – Developments and their applications and effects in everyday life.**

**Regulating AI – World leaders have a long road ahead**

Online gaming refers to games available on the internet, accessed through a computer, where players deposit money with the aim of winning prizes based on their performance.

**Legal Status in India:**

• **Game of Skill vs Game of Chance:**

- Skill games, such as quizzes, are generally legal under the Public Gambling Act of 1867, allowing betting on them. On the other hand, chance games, like dice, are typically not allowed for betting.

• **Judicial View:**

- The Supreme Court has established the "preponderance of skill" standard to determine the legality of a game, considering whether it is primarily skill-based (usually legal) or luck-based (potentially banned). Various High Courts have attempted to restrict online games involving monetary betting.

• **Federal Jurisdiction:**

- States have exclusive authority, as granted by the Indian Constitution, to enact laws related to betting and gambling (Entry No. 34 of List II in the Seventh Schedule)

**Central Legislation:**

- The Indian Penal Code of 1860 addresses public display of obscene content related to gambling.
- The Prize Competitions Act of 1955 outlines criteria for competition prizes.
- The Lotteries Regulation Act of 1998 permits state-managed lotteries.
- The Foreign Exchange Management Act of 1999 prohibits sending lottery or race winnings abroad.
- The Information Technology Rules of 2011 restrict internet services from hosting gambling content.
- The Income Tax Act of 1961 and the Central Goods and Services (GST) Act of 2017 ensure taxation of legal gambling.

**Recent Tax Demands:** Gaming companies face show-cause notices for a substantial GST demand of Rs 1.5 lakh crore for the period 2017-2022. Tax authorities demand a 28% GST on the entire pooled amount by gamers, not just the service fee.

**Issues with the Gaming Industry:**

• **Misclassification:**

- Authorities mislabel the gaming industry as gambling, subjecting it to a high 28% GST rate, potentially leading to business closures.

- **Retrospective Taxation and Legal Volatility:**

- Unexpected backdated tax claims and legal uncertainties create financial and legal instability for gaming companies.

- **Threat to the Emerging Industry:**

- Excessive tax demands pose a threat to the gaming industry's survival, risking India's reputation and potentially prompting an industry exodus to unregulated foreign platforms.

**Recommendations:**

- **Comprehensive Legislation:**

- Develop specific laws defining the legality, taxation, and regulatory framework for online gaming.

- **Establishment of a Regulatory Authority:**

- Create a central Gaming Authority to monitor industry practices, classify games, ensure consumer protection, and address societal impact.

- **Protection of Minors:**

- Enforce age limits and verify user age to prevent underage access to online gaming involving real money.

- **Responsible Gaming Measures:**

- Implement measures to limit gaming time and spending, offer counseling services, and allow self-exclusion to mitigate addiction and financial risks.

- **Transparency and Fairness:**

- Remove anonymity, establish grievance mechanisms, and enhance user trust by promoting transparency and fairness in online gaming.

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**Exploring the Fundamentals of Electricity Transmission - Unveiling the Basics of Transmitting Electrical Power**

**A power supply system consists of three primary components:**

**1. Generation:**

- Electricity is produced both at power plants and smaller renewable energy installations.

**2. Transmission:**

- The generated electricity is transmitted through a network of stations, substations, overhead and underground cables, and transformers.

**3. Distribution:**

- The transmitted electricity is distributed to consumers in a standardized manner.

A power grid is instrumental in performing these functions.

### **Role of a Power Grid:**

- A national power grid integrates production, transmission, and distribution.
- It includes storage facilities for surplus energy, managing fluctuations in demand through automated systems, and handling emergency situations by connecting to power sources like gas turbines.

### **Transmission Process in a Power Grid:**

1. **Step I:**
  - Electricity from power stations is routed to transformers, which increase its voltage.
2. **Step II:**
  - The wires lead to substations.
3. **Step III:**
  - Distribution substations decrease the voltage in power lines, preparing the electricity for consumption.

### **Factors Affecting Transmission Losses:**

- **Magnitude of Current and Voltage:**
  - Higher transmission efficiency is achieved with lower current and higher voltage, regulated by transformers.
- **Characteristics of Wire (Thickness and Cost):**
  - Thicker cables reduce energy loss but may be costlier.
- **Type of Current (AC or DC):**
  - Alternating current (AC) is more efficient due to easier voltage manipulation with transformers.
- **Frequency of AC:**
  - Higher AC frequency increases resistance to current in the wire.

### **Challenges of Power Transmission in India:**

- **Aging Infrastructure:**
  - Many transmission and distribution lines need modernization, leading to energy losses.
- **Overloading and Unbalanced Loading:**
  - Overloading transformers and unbalanced loading reduce infrastructure lifespan.
- **Theft and Pilferage:**
  - Unauthorized tapping and theft of electricity pose significant challenges.
- **Voltage Fluctuations:**
  - Variations in voltage levels can result in energy losses.
- **Inadequate Investment:**
  - Financial constraints limit investments in modern technology and equipment.

### **Terminology:**

- **Insulators:**
  - Materials in contact with wires that draw away some current during a surge.
- **Dampers:**
  - Devices preventing wire vibrations from affecting tower stability.
- **Switches:**
  - Used to control current availability and move currents between lines.
- **Wide-area Synchronous Grid:**
  - All generators in a grid producing AC at the same frequency.
- **Alternating Current (AC):**
  - An electric current that periodically reverses direction and changes magnitude continuously.