Science & Technology · GS - III

The adoption of advanced vehicle-safety technologies can play an important role in reducing road accident fatalities in India. Discuss the significance of Autonomous Emergency Braking Systems (AEBS) and the challenges associated with their implementation.

EXAM YEAR	PAPER	SUBJECT
DAILY PRACTICE 22/10/2026	GS - III	Science & Technology

MARKS	WORD LIMIT
10	~150 words

Answer Hint

Autonomous Emergency Braking System, Active Safety Technology, Collision Detection, Road Accident Fatalities, Automotive Safety Standards, Sensor Reliability, Vehicle Costs, Infrastructure, Regulatory Enforcement, Public Awareness.

Model Answer

Introduction

Road accidents are a major public-safety challenge in India. Autonomous Emergency Braking System (AEBS) is an advanced vehicle-safety technology that detects potential collisions and automatically applies brakes to prevent or reduce their impact.

Main Body

AEBS can improve road safety by reducing the risk of collisions caused by delayed driver reactions. It may also help protect pedestrians and other road users, depending on the system's capabilities. Making this technology mandatory in vehicles could encourage safer automobile design and bring India closer to international vehicle-

safety practices.

However, its implementation faces several challenges. Advanced sensors and electronic systems may increase vehicle costs, particularly for budget cars. Performance can also be affected by poor visibility, adverse weather, sensor limitations and unpredictable road conditions. Moreover, AEBS cannot replace responsible driving, road infrastructure improvements or effective traffic-law enforcement.

The government should establish clear safety and testing standards, ensure reliable performance under Indian driving conditions, and encourage affordable technology through appropriate regulation. Public awareness and regular vehicle testing are also essential.

Conclusion

AEBS can strengthen India's road-safety framework, but it should complement—not replace—responsible driving, safer infrastructure and effective enforcement. A comprehensive approach is necessary to reduce road accidents and fatalities.

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