ROLL NO.: _____

PATENT AGENT EXAMINATION, 2025

(Under Section 126 of the Patents Act, 1970)

PAPER II

TIME: 02.00 p.m. to 05.00 p.m. (Three Hrs) **Total Marks: 100**

Instructions:

1. This paper consists of 4 parts - Part A (20 Marks), Part B (20 Marks), Part C (20 Marks) & Part D (40 Marks).
2. All questions in Part A, B and C are Compulsory.
3. Part D comprises two parts - Part D1 is of 10 marks and D2 of 30 marks. Part D1 consists of 2 questions and the Candidate is required to answer any ONE of them; and Part D2 consists of 4 questions and the candidate is required to answer any ONE of them.
4. Candidates should read the questions very carefully before answering.
5. In case a candidate answers more questions than required, the first attempted question shall be evaluated.
6. No clarification will be provided during the course of the examination.
7. Wherever date is mentioned, it shall be treated to be in dd/mm/yyyy format.
8. There is no negative marking.
9. All references to "Act" and "Rules" may be read as The Patents Act, 1970 and The Patents Rules, 2003 respectively, as amended until now and their related applications, except when it is specifically referred to The Designs Act, 2000 and The Designs Rules 2001, as amended.
10. Candidate is expected to quote relevant sections and rules as well as prescribed forms in the answer.
11. No candidate should leave or will be allowed to leave the Examination Hall (i) till the completion of the half of the time for the examination; (ii) without signing the Attendance Sheet; and (iii) without properly handing over her/his OMR sheet / Answer Booklet to the Invigilator.
12. In case any candidate wants to leave the examination hall before completion of the prescribed time of the examination then she/he can do so by surrendering the question paper.

Part A

1. Recently, the Patents (Amendment) Rules, 2024 has relaxed some burden on the applicant in terms of fulfilment of the requirements for filing information and undertaking regarding corresponding foreign applications with an objective to improve 'ease of doing business' in this aspect. Discuss the amendments in the provisions mentioning relevant section, rules and form(s). **(5 marks)**

2. Mr. Hariharan is the owner of a small tech start-up company that has recently developed an innovative tool for managing customer relationships. Mr. Hariharan has been working hard to gain traction in the market. One day, he receives a letter from a large company, Macrocust Corporation, which claims that Mr. Hariharan's product infringes on their patent for a similar tool. The letter

demands that he should stop selling his product immediately or face a lawsuit for patent infringement. The letter neither provided any information about the patent nor any clear evidence or legal grounds for the threat, but insists that they will take legal action if Mr. Hariharan does not comply. Distressed by the threat, Mr. Hariharan decides to consult you as a person well versed in the patent law. What would be your suggestions to Mr. Hariharan with regard to the following:

a. Mention the legal actions under the Patents Act that Mr. Hariharan may take in response to Macrocust Corp's threatening letter along with the possible relief sought? **(3 marks)**

b. In such a proceeding, under what conditions the court may grant the relief sought? **(2 marks)**

3. A textile machine manufacturer invented a weaving machine with very high productivity as compared to state of the art machines. A patent application for the same was granted on 30/12/2024. What is the deadline for filing statement regarding the working of the patented invention on commercial scale in India by the applicant in this scenario? Further, considering the various provisions of extension provided under the Patents Rules, calculate the extended dates till when the statement regarding the working of the patented invention on commercial scale in India may be filed.
(5 marks)

4. Mr. Ghanshyam develops an improved process for preparing free-flowing particles by using a booster charge in a tubular detonator. Upon filing for a patent, the government imposes secrecy directions due to the potential military application of the technology. What are the potential consequences of these secrecy directions? Discuss the process and provisions for reconsideration of the secrecy direction and the circumstances under which they may be revoked. Mention the relevant sections and rules.
(5 marks)

Part B

5. In September 2024, Company BioHealth Ltd. (Applicant) filed a patent application in India for a new herbal composition called HerboMedix, which is claimed to treat a wide range of skin infections. The application was published, and a competitor company in the herbal medicines industry SecureHealth Ltd., noticed the following:

Company SecureHealth Ltd. noted that BioHealth Ltd. obtained the core formula for HerboMedix by improper means from one of its researchers. According to Company SecureHealth Ltd., the researcher was previously employed at Company SecureHealth Ltd. and was involved in an internal research project titled HerbRestore. The project included a formula almost identical to HerboMedix, and the researcher had access to confidential information and proprietary studies related to the formula. Upon leaving Company SecureHealth Ltd., the researcher joined BioHealth Ltd., and shortly thereafter, BioHealth Ltd. filed a patent application for a product that closely resembled the previously undisclosed HerbRestore formula.

Company SecureHealth Ltd. further noted that BioHealth Ltd. has made materially incorrect disclosures in its patent specification. In the patent application for HerboMedix, BioHealth Ltd. states that the formula was developed internally through unique R&D efforts. However, Company

SecureHealth Ltd. possesses evidence of published research papers, internal reports, and records showing that the formula was actually derived from the research carried out by Company SecureHealth Ltd.'s team, suggesting that the disclosure of the development process was incorrect and intentionally misleading.

Company SecureHealth Ltd. has evidence that parts of the formulation for HerboMedix were disclosed in a publicly available research paper authored by Company SecureHealth Ltd.'s research team. The paper was published six months before the priority date claimed by BioHealth Ltd. in their patent application. The research paper details the extraction techniques and chemical combinations, which BioHealth Ltd. subsequently included in the specification of HerboMedix without substantial modification.

In view of the above, answer the following by mentioning the relevant sections and rules made therein along with prescribed forms:

a. What are the options available under the Patents Act for Company SecureHealth Ltd. to challenge the patent application filed by BioHealth Ltd. for HerboMedix, and which specific grounds would be the most effective in supporting their cause in the above given scenario? **(5 marks)**
b. Once the above challenge from Company SecureHealth Ltd. is received, what would be the procedural sequence for dealing with the matter, under the Patents Act and Rules made therein? **(5 marks)**

6. InnoTech Solutions, a Bangaluru-based startup, has developed a revolutionary eco-friendly water filtration system to improve water purification in rural areas. The startup wants to file a patent application to protect their novel filtration system, which they believe will have a significant impact in both urban and rural markets. However, the company is operating on a limited budget and needs to navigate the patent filing process efficiently. In this context, InnoTech Solutions approaches you for answers to the following questions:

1. What are the specific benefits available to startups under the Patents Act, 1970 (as amended) and Rules made therein? **(4 marks)**
2. Which rules and forms apply to InnoTech Solutions in terms of filing a patent application and accessing these benefits? **(3 marks)**
3. What are the supporting documents required to avail such benefits? **(3 marks)**

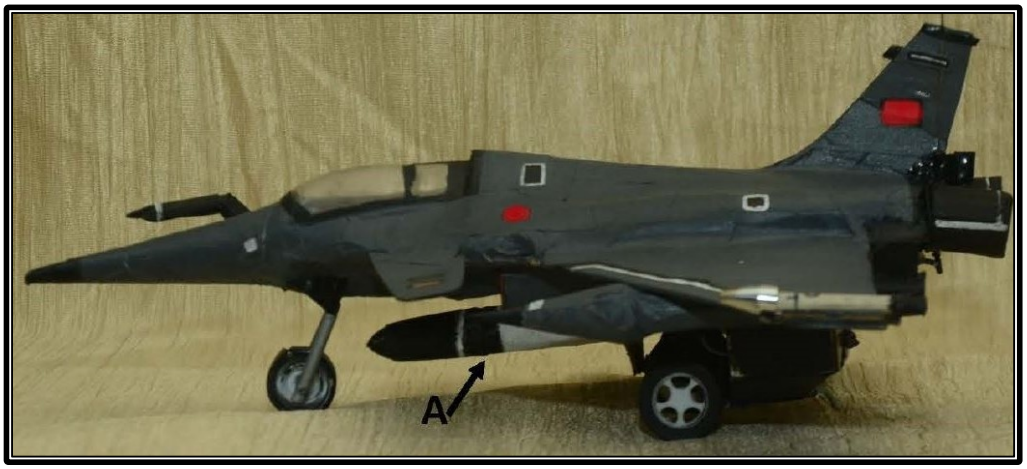
PART – C

7. What are the key objectives of the recently concluded Riyadh Design Law Treaty? Suggest at least two changes in Indian Design Law to implement provisions of the Treaty. **(3 marks)**

8. A start-up company Indesign Inc. has developed a unique design for a soft drink bottle and eagerly looking for revenue generation. The Government of India is also promoting the startup ecosystem in the country and creating platforms to bring the start-ups and financial organizations together so that the startups get required funding. In one of such notified exhibition by the Govt. of India, Indesign Inc. displayed their product and distributed leaflets describing their design product to the probable financers. Now, while preparing for design registration, will the display and description of the design

product during the exhibition be an impediment? If yes, what are the options provided in the Designs Act, 2000 to avoid such impediments. **(5 marks)**

9. You are a registered Patent Agent and Mr. Tanshu from Jammu and Kashmir has approached you to file an application for the registration of an industrial design for the toy designed by him (figure is shown below). Draft an application for the registration of an industrial design as per the requirements outlined in the Designs Act, 2000. Also mention the necessary forms and supporting documents to ensure compliance with procedural requirement for submission of the design application. (Drawing below need NOT to be reproduced in the answer, it may be replaced with a box with 'X' in answer)
(5 marks)



10. A company GrayLine Appliances Inc., which makes home appliances, registered a design for their new kitchen blender on 02/02/2012. On 04/01/2023, GrayLine Appliances Inc. found that a competitor company, Kings Appliances had launched a blender with similar design. It was noted by GrayLine Appliances Inc. that its rights in the registered design has lapsed and no application for extension of such rights was filed within the prescribed time. In such a scenario:

a. What are the steps that GrayLine Appliances Inc. must take to restore their lapsed design? Clearly mention the relevant section(s), rule(s), form(s), timelines prescribed for the same in the Designs Act. **(4 marks)**
b. What are the options available to Kings Appliances, if it wants to continue selling its blender? **(3 marks)**

PART-D1

Part D1 contains two questions; the candidate is required to answer <u>any ONE of them.</u> In case a Candidate answers more than one question in any part, the first attempted question will be considered for evaluation.

11a. Dr. Raghav works as a Scientist at Long live World R & D Center and comes up with an invention. He is very keen to file a patent application for his invention, so he sends his proposal to his organization's IPR Cell with a proposed invention draft. The IPR Cell conducts a preliminary search and finds two relevant documents D1 and D2, which it resends to Dr. Raghav asking him to justify the novelty and inventiveness of his invention over D1 and D2.

Invention of Dr. Raghav: It pertains to an Eco-Friendly Ink Composition for Printing consists of the following key components:

A. Biodegradable Pigments: Derived from natural sources such as plants and minerals, these pigments offer vibrant colors while being safe for the environment. The use of biodegradable pigments reduces the ecological footprint of the ink upon disposal.

B. Vegetable Oil-Based Solvent: This solvent is sourced from renewable vegetable oils (e.g., soya, canola, or linseed oil), which not only enhances the ink's performance by providing a smooth application but also minimizes reliance on petroleum-based solvents, making the ink more sustainable.

C. Natural Resins: The addition of natural resins enhances adhesion to substrates and improves durability. Resins derived from materials like rosin with low environmental impact contribute to the overall performance of the ink without introducing harmful additives.

The eco-friendly ink composition displays low carbon footprint and aligns with global sustainability goals being environmentally friendly product. Alongside provides aesthetic appeal and improved performance with respect to print quality, versatility in application and meets health and safety requirements of global standards. The composition is designed for use in various printing methods, including digital and screen printing.

Disclosure by D1:

D1 describes an ink composition designed for sustainable printing applications. It discloses an eco-friendly ink made from natural pigments, vegetable oil-based solvents, and minimal synthetic additives. The ink includes pigments derived from botanical sources, specifically plant-based extracts, to provide a range of color options. The vegetable oil-based solvent (from sources like sunflower or corn oil) ensures smooth application while reducing reliance on synthetic solvent.

Disclosure by D2:

D2 discloses the formulation of water-based inks that reduce volatile organic compounds (VOCs) in the printing process. It discloses an ink formulation focusing on environmental sustainability by minimizing volatile organic compounds (VOCs) through the use of water as the primary solvent. The ink composition includes biodegradable pigments derived from natural sources such as plant and mineral extracts, offering

vibrant colors with minimal environmental impact. Additionally, additives like biopolymer stabilizers and binding agents are included to enhance print performance adhesion and quality.

Go through the disclosures of the draft of Dr. Raghav's invention, disclosures of D1 and D2 given above and prepare a detailed response from Dr. Raghav, justifying novelty and inventiveness of his invention vis-a-vis disclosure of document D1 and D2.

OR

11b. Mr. Vikram works as a Researcher at Central Research Institute. After coming up with an invention, he sends his proposal to his Institute's Patent filing Division with a draft of invention. The Patent filing Division finds two relevant documents D1 and D2 in their pre-filing search procedure and resends to Mr. Vikram to justify the novelty and inventiveness of his invention over D1 and D2.

Invention of Mr. Vikram: It pertains to an advanced 3-point seat belt system featuring an adjustable buckle mechanism, innovative webbing materials, and additional safety features designed to improve overall user experience, comfort, and protection during a collision. It has key features such as:

Adjustable Buckle Mechanism: The seat belt buckle can be easily adjusted with one hand, allowing the user to modify the fit based on body size and seating position quickly.

High-Performance Webbing Material: Utilizes composite webbing made from advanced synthetic fibers that are lighter, yet stronger than traditional materials. This webbing exhibits enhanced abrasion resistance, UV stability, and reduced stretch, to minimize occupant movement during a crash, improving occupant protection.

Integrated Load Limiting Device: An integrated load limiter that allows the belt to stretch slightly during a severe impact, reducing forces applied to the occupant's body.

Enhanced Comfort Padding: The system includes ergonomic padding around the shoulder and lap sections of the belt made from memory foam, ensuring comfort for all users while also promoting proper seat belt positioning without compromising safety.

Smart Technology Integration: The system includes sensors that monitor belt usage and position, alerting the driver or passengers if the seat belt is improperly secured.

Color-Coded Adjustment Markers: The belt features color-coded markers to indicate proper adjustments for different body sizes, making it easy for users to know when the seat belt is fitted correctly.

Quick Release Mechanism: The invention includes a quick-release feature that allows users to disengage the seat belt rapidly in the event of an emergency.

Disclosure by D1:
D1 focuses on a 3-point seat belt system that includes an automatic tensioning mechanism to tighten the seat belt during specific conditions, such as sudden deceleration or impact. The tensioning mechanism uses an inertial reel or pyrotechnic pre-tensioner that engages automatically, reducing the slack in the belt to help restrain occupants during a crash. This feature enhances occupant safety by minimizing forward movement.

Disclosure by D2:
D2 introduces adjustable comfort features aimed at improving the user experience when wearing a seat belt. It includes a mechanism that allows the user to adjust the belt's positioning and tension to reduce discomfort during long drives. The comfort system is designed with user-friendly adjustment options to help ensure proper seat belt positioning.

Go through the disclosures of the draft of Mr. Vikram's invention, disclosures of D1 and D2 given above and prepare a detailed response from Mr. Vikram, justifying novelty and inventiveness of his invention vis-a-vis disclosure of document D1 and D2.

PART-D2

Part D2 contains four questions; the candidate is required to answer ANY ONE of them. In case a Candidate answers more than one question, the first attempted questions will be considered for evaluation.

A client meets you and provides technical information regarding his/her invention. **Draft a complete specification** in accordance with the provisions of the Patents Act, 1970 (as amended) and the Patents Rules, 2003 (as amended) with **at least two independent claims (one for product and another for process) and four dependent claims (at least two dependent claims for each category)**. While drafting the complete application, **specify an appropriate title, abstract, summary of the invention, description explaining its details, claims defining its protectable aspects, drawings or figures, and/or tables for visual representation.**

12a. Problem: Alzheimer's disease is a debilitating neurodegenerative disorder affecting millions worldwide, marked by progressive cognitive decline and memory loss. Current therapies primarily alleviate symptoms without targeting underlying mechanisms, highlighting the urgent need for innovative treatments. Key pathological features include the accumulation of amyloid-beta plaques, hyperphosphorylation of tau proteins, and chronic neuroinflammation.

Solution: Development of ADX-101: ADX-101, a novel monoclonal antibody designed to target and clear amyloid-beta aggregates while modulating tau pathology and neuroinflammation.

Key Features:

- **Target Mechanism**: ADX-101 specifically binds to aggregated amyloid-beta, facilitating its clearance through microglial activation and phagocytosis, and preventing tau aggregation.
- **Reduced Immunogenicity**: Designed using human immunoglobulin sequences to minimize adverse immune responses.

ADX-101 Antibody Design and CDRs:

- **Heavy Chain (VH)**:
  - **CDR1**: KSVVSGD
  - **CDR2**: FGSNQLSS
  - **CDR3**: VGIWYTREK
- **Light Chain (VL)**:
  - **CDR1**: RAEKITGW
  - **CDR2**: VYVPNYDG
  - **CDR3**: HSSASNL

Method of Preparation of ADX-101:

1. **B Cell Selection**: Reverse transcription PCR is used to amplify variable regions from B cells of immunized donors.
2. **Recombinant Expression**: Cloned sequences are inserted into expression vectors and transfected into CHO cells for antibody production.
3. **Purification**: ADX-101 is purified using Protein A affinity chromatography.

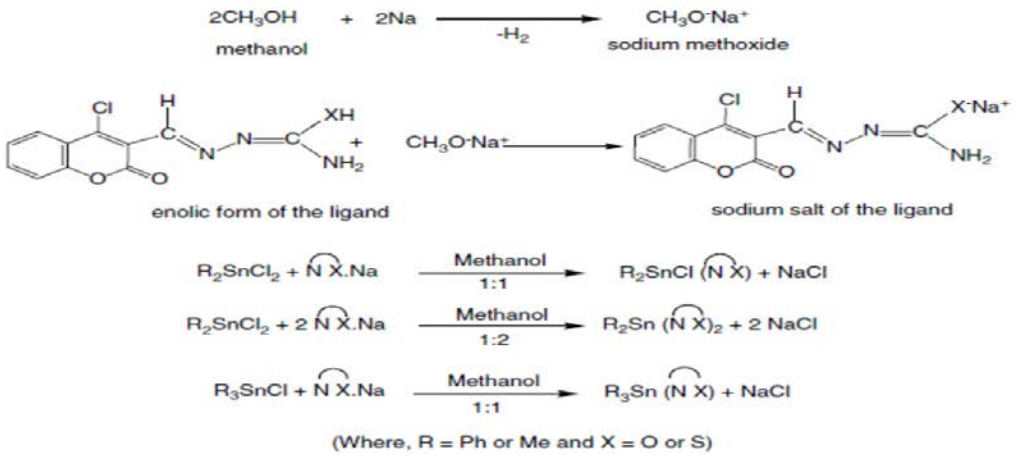
Preclinical and Clinical Trials:

- **In Vitro**: ADX-101 shows high affinity for amyloid-beta aggregates and increases microglial phagocytosis.
- **In Vivo**: In transgenic mouse models, ADX-101 effectively reduces plaque burden and improves cognitive performance.
- **Phase I Trials**: Demonstrate safety and tolerability with no significant adverse events.
- **Phase II Trials**: Show notable cognitive improvements in 150 Alzheimer patients compared to placebo.
- **Phase III Trials**: Confirm efficacy in a large cohort of 1,000 participants, slowing cognitive decline.

Following positive trial outcomes, application for regulatory approval and market launch of ADX-101 is in the pipeline, marking it as a novel therapeutic option for Alzheimer's.

OR

12b. Problem: Traditional methods of pest control and microbial management often involve the use of toxic chemical agents that may have harmful environmental impacts. Organotin (IV) compounds, while known to possess biological activity, often require complex synthesis methods and may not be optimally effective across a broad range of biological activities. Furthermore, the solvent-based synthesis processes used in the preparation of these compounds contribute to chemical waste, increasing environmental concerns. While Schiff base complexes of metal ions have been explored for their antimicrobial and pesticidal properties, there remains a need for new and improved metal-organic complexes with enhanced biological efficacy, including broader antimicrobial and pesticidal activities. Additionally, reducing environmental impact through solvent-free microwave or minimal-solvent synthesis is a priority.

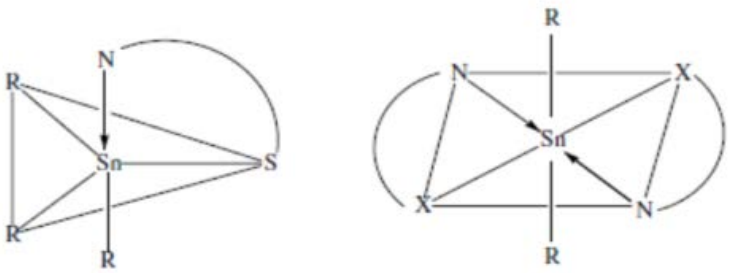


Solution Offered: The synthesis of novel Organotin(IV) complexes derived from bidentate ligands, 3-formyl-4-chlorocoumarin semicarbazone (L^1H) and 3-formyl-4-chlorocoumarin thiosemicarbazone (L^2H). These complexes are synthesized through microwave-assisted methods, which offer more efficient solvent-free, environmentally friendly routes for complex formation, and further exhibits antimicrobial and pesticidal activities.

Ligands: 3-formyl-4-chlorocoumarin semicarbazone (L^1H); 3-formyl-4-chlorocoumarin thiosemicarbazone (L^2H)

Metal Components: Ph_3SnCl,Me_3SnCl,Me_2SnCl2

Synthesis Methods: Microwave-assisted methods in a solvent-free system. The metal ions (Ph_3Sn, Me_3Sn, Me_2Sn) are coordinated to the ligands in varying stoichiometries (1:1 and 1:2 ratios), resulting in complexes with trigonalbipyramidal (**Formula I**) or octahedral geometry (**Formula II**), respectively.



Formula I **Formula II**

Biological Testing Data:

Antimicrobial Activity

Table Minimum inhibitory concentration mg/mL of the ligands and their complexes

Compound	*E. coli*	*B. subtilis*	*A. niger*	*F. oxysporum*
L^1H	25	27	35	37
$Ph_3Sn(L^1)$	18	21	29	26
$Me_3Sn(L^1)$	20	22	31	21
$Me_2SnCl(L^1)$	21	20	29	19
$Me_2Sn\ (L^1)_2$	19	18	27	17
L^2H	22	24	34	35
$Ph_3Sn(L^2)$	16	18	22	23
$Me_3Sn(L^2)$	18	19	24	18
$Me_2SnCl(L^2)$	17	16	20	19
$Me_2Sn\ (L^2)_2$	15	14	19	20

Pesticidal Activity

Table Pesticidal data of the ligands and their metal complexes

Compounds	Correct motility (%)	X^2	LC_{50} mgL^{-1}
L^1H	44.44	0.144	610
$Ph_3Sn(L^1)$	55.55	0.275	260
$Me_3Sn(L^1)$	50.00	0.694	295
$Me_2SnCl(L^1)$	61.11	0.278	305
$Me_2Sn\ (L^1)_2$	66.66	0.620	190
L^2H	50.00	0.540	405
$Ph_3Sn(L^2)$	61.11	0.202	240
$Me_3Sn(L^2)$	66.66	0.471	250
$Me_2SnCl(L^2)$	72.22	0.242	280
$Me_2Sn\ (L^2)_2$	77.77	0.162	160
Control	–	1.142	–

Impact and Benefits:

Improved reaction yields and shorter reaction times are the advantages of microwave-assisted synthesis. The development of Organotin(IV) complexes encompass a range of biological activities, including antifungal, antibacterial and insecticidal properties. Solvent-free synthesis process is ecofriendly and sustainable.

OR

12c. Problem: Traffic congestion on major highways and toll roads leads to significant delays, increased fuel consumption, and environmental pollution. Traditional toll collection methods, such as cash or manual toll booths, exacerbate these issues by causing slowdowns and long wait times. Additionally, these systems often lack flexibility and fail to provide accurate traffic data, reducing the efficiency of road usage and increasing driver frustration.

Solution: Development of a GPS-Based Toll System

To address these challenges, GPS-based toll system has been developed that leverages real-time location tracking and digital payments to enhance the efficiency of toll collection and improve the overall driving experience.

Key Features of the GPS-Based Toll System:

- **Real-Time Toll Calculation**: The system uses GPS data to automatically calculate toll fees based on vehicle location, route selection, and traffic conditions, ensuring dynamic pricing that reflects current demand.
- **Seamless Payment Processing**: Drivers can link their bank accounts or digital wallets to the system, enabling automatic payment deductions as they pass through toll zones without stopping.
- **Traffic Management Insights**: The system provides real-time updates to drivers about traffic conditions, alternative routes, and estimated travel time, effectively helping them make informed decisions.

- **Data Analytics for Toll Agencies**: The collected data on vehicle flow and traffic patterns enables better traffic management and infrastructure planning, allowing toll agencies to optimize operations and reduce congestion.

Implementation Strategy:

1. **Infrastructure Development**: GPS tracking devices and sensors on existing toll roads are installed to facilitate real-time data collection and processing.
2. **Mobile Application Launch**: A user-friendly mobile application that provides drivers with account management, payment options, and live traffic updates has been developed
3. **Partnerships**: Collaboration with telecommunications companies has ensured the reliability of GPS data with Governments approval has lead to integrate the system into existing traffic management frameworks.

Pilot Program:

- A pilot program has been initiated on a Bengaluru-Mysore highway or toll road, allowing for real-world testing and adjustments based on user feedback before full-scale implementation. This programme has shown the following results

Benefits:

- **Improved Traffic Flow**: By eliminating the need for toll booths, traffic congestion is reduced, allowing for smoother travel.
- **Cost Savings**: Reduced operational costs for toll agencies on Bengaluru-Mysore highway by minimizing the need for manual toll collection and maintenance of toll booths.
- **Enhanced Driver Experience**: Drivers benefit from convenience, reduced wait times, and access to real-time traffic data that can help them avoid delays.

OR

12d. Problem: As vehicles on the roads become more numerous and diverse, the issue of glare from headlights has become a significant safety concern. Traditional high-beam headlights provide improved visibility for drivers during night time and adverse weather conditions, but they pose a hazard to oncoming traffic and pedestrians by causing momentary blindness and discomfort.

Key problems associated with conventional headlights include:

- **Increased Risk of Accidents**: Glare from high-intensity headlights can impair the vision of other drivers, increasing the risk of collisions.
- **Driver Discomfort**: The bright light can lead to discomfort and distraction for drivers in oncoming vehicles.
- **Inability to Maximize Light Use**: Many drivers hesitate to use high beams to avoid blinding others, thus reducing their own visibility.

Solution: Development of Anti-Glare Matrix Headlights

To address these challenges, we developed anti-glare matrix headlights—an innovative lighting system that utilizes advanced technology to provide optimal visibility while minimizing glare to other road users.

Key Features of Anti-Glare Matrix Headlights:

- **Adaptive Light Distribution**: The system uses a matrix of individually controlled LED lights that can adjust the beam pattern dynamically based on surrounding traffic conditions. This enables the headlights to illuminate the road ahead while selectively dimming or turning off specific LEDs directed toward oncoming vehicles.
- **Real-Time Detection**: Integrated sensors and cameras continuously monitor the surrounding environment, detecting other vehicles and obstacles, and adjusting light distribution in real-time.
- **Enhanced Visibility**: By optimizing light distribution, the headlights provide improved visibility for the driver without causing discomfort to others, resulting in safer navigation during night driving or poor weather conditions.

Strategy:

1. **Research and Development**: Extensive research led to development of the individual LED matrix technology, focusing on precise control mechanisms for adaptive light distribution.
2. **Pilot Programs**: The prototype system was tested in real-world driving scenarios to gather data on performance and driver feedback. Adjustments were made based on the results before mass production.
3. **Collaboration with Saarathi Automobile Manufacturers**: Partnership with Saarathi car manufacturer led to development of prototype integrating this technology into new vehicles (car, Jeep, Lorry) and further plans to consider retrofitting options for existing models is being reviewed.

Benefits:

- **Increased Safety**: By reducing glare to oncoming drivers, the risk of night time accidents has significantly minimized, contributing to overall road safety.
- **Enhanced Driving Experience**: Drivers state they benefitted from improved visibility and confidence while driving at night, increasing comfort and reducing fatigue.
- **Regulatory Compliance**: This system is designed to comply with emerging safety regulations related to headlight brightness and glare reduction.

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