

ATME COLLEGE OF ENGINEERING

13th KM Stone, Bannur Road, Mysore - 560 028

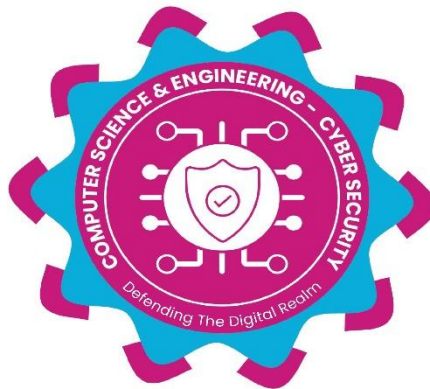


A T M E

College of Engineering

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CYBER SECURITY



LECTURE NOTES

COURSE: RESEARCH METHODOLOGY & IPR

COURSE CODE: BRMK557

SEMESTER: V

COURSE COORDINATOR: Mr. YOGESH N

(ACADEMIC YEAR 2026-27)

INSTITUTIONAL MISSION AND VISION

Objectives

- To provide quality education and groom top-notch professionals, entrepreneurs and leaders for different fields of engineering, technology and management.
- To open a Training-R & D-Design-Consultancy cell in each department, gradually introduce doctoral and postdoctoral programs, encourage basic & applied research in areas of social relevance, and develop the institute as a center of excellence.
- To develop academic, professional and financial alliances with the industry as well as the academia at national and transnational levels.
- To develop academic, professional and financial alliances with the industry as well as the academia at national and transnational levels.
- To cultivate strong community relationships and involve the students and the staff in local community service.
- To constantly enhance the value of the educational inputs with the participation of students, faculty, parents and industry.

Vision

Development of academically excellent, culturally vibrant, socially responsible and globally competent human resources.

Mission

- To keep pace with advancements in knowledge and make the students competitive and capable at the global level.
- To create an environment for the students to acquire the right physical, intellectual, emotional and moral foundations and shine as torch bearers of tomorrow's society.
- To strive to attain ever-higher benchmarks of educational excellence.

Department of Computer Science & Engineering – Cyber Security

Vision of the Department

- To nurture competent and ethical cyber security professionals capable of contributing to secure and resilient digital ecosystems

Mission of the Department

- M1: To impart strong foundational knowledge in cyber security through effective teaching– learning practices and a continuously evolving curriculum that addresses emerging cyberthreats and technologies.
- M2: To promote research, innovation, and industry collaboration in emerging areas of cyber security to address real-world digital security challenges.
- M3: To instill professional ethics, teamwork, leadership qualities, and a sense of social responsibility in addressing real-world cyber challenges.
- M4: To foster a culture of lifelong learning among students by encouraging higher studies, professional development, and active engagement with the global cyber security community.

PROGRAM EDUCATIONAL OBJECTIVES (PEO'S):

- PEO1 –Excel as cyber security professionals or entrepreneurs by applying strong fundamentals of cyber security engineering.
- PEO2 – Pursue higher studies, research, and professional certifications while engaging in lifelong learning to keep pace with evolving cyber technologies and threats.
- PEO3 – Exhibit leadership, teamwork, professional ethics, and social responsibility while addressing cyber security challenges in multidisciplinary environments.

Program Specific Outcomes (PSOs)

- PSO1 – Apply principles of computer science, programming, algorithms, operating systems, and computer networks to design and develop efficient and reliable computing solutions.
- PSO2 – Identify, analyze, and mitigate cyber threats and vulnerabilities using techniques related to network security, ethical hacking, penetration testing, and digital forensics.
- PSO3 – Apply cyber security policies, cyber laws, risk management practices, and incident response strategies to ensure the protection and resilience of digital systems.

MODULE 5: INDUSTRIAL DESIGN, GEOGRAPHICAL INDICATIONS AND CASE STUDIES ON PATENTS

Syllabus

Industrial Designs: Eligibility Criteria, Acts and Laws to Govern Industrial Designs, Design Rights, Enforcement of Design Rights, Non-Protectable Industrial Designs India, Protection Term, Procedure for Registration of Industrial Designs, Prior Art Search, Application for Registration, Duration of the Registration of a Design, Importance of Design Registration, Cancellation of the Registered Design, Application Forms, Classification of Industrial Designs, Designs Registration Trend in India, International Treaties, Famous Case Law: Apple Inc. vs. Samsung Electronics Co.

Geographical Indications: Acts, Laws and Rules Pertaining to GI, Ownership of GI, Rights Granted to the Holders, Registered GI in India, Identification of Registered GI, Classes of GI, Non-Registerable GI, Protection of GI, Collective or Certification Marks, Enforcement of GI Rights, Procedure for GI Registration Documents Required for GI Registration, GI Ecosystem in India.

Case Studies on Patents: Case study of Curcuma (Turmeric) Patent, Case study of Neem Patent, Case study of Basmati patent, IP Organizations in India, Schemes and Programs

INDUSTRIAL DESIGNS

- The word ‘Design’ is defined as the features of shape, configuration, pattern, ornament or composition of lines or colors applied to any article. The Design may be of any dimension i.e. one or two or three dimensional or a combination of these.
- In addition, it may be created by any industrial process or means, whether manual, mechanical or chemical, separate or combined, which in the finished article appeal to and is judged solely by the eye.
- But the word Design does not include any mode or principle of construction or anything which is in substance a merely mechanical device.

- The main object of registration of industrial Designs is to protect and incentivize the original creativity of the originator and encourage others to work towards the art of creativity.

ELIGIBILITY CRITERIA

- The Design for which the protection is being sought must be novel or original i.e., should not be disclosed to the public by prior publication or by prior use or in any other way.
- The Design should be significantly distinguishable from the already registered Designs existing in the public domain.

ACTS AND LAWS TO GOVERN INDUSTRIAL DESIGNS

In India, Industrial Designs are governed under 'The Designs Act' 2000 (<http://www.ipindia.nic.in/acts-designs.htm>) and 'Design Rules' 2001 (<http://www.ipindia.nic.in/rules-designs.htm>), which have been amended from time to time in 2008, 2013, 2014 and 2019. The Design should include the following characteristics:

- It should be novel and original.
- It should be applicable to a functional article.
- It should be visible on a finished article.
- There should be no prior publication or disclosure of the Design.

Some of the famous Industrial Designs are mentioned below:

- Coca-Cola Bottle - The contoured-shaped glass bottle of the Coca-Cola Company is marveled as a master showpiece in the field of industrial design. It was designed in 1915 and is still a cynosure for all eyes.
- iPhone - It is a highly popular mobile phone manufactured by American company 'Apple Inc.'. The sleek, handy and rectangular body is pleasing to the eyes. The corners are round and smooth. The features, such as on/off and speech volume are easy to operate.

DESIGN RIGHTS

- The Design registration also confers a monopolistic right to the Proprietor by which he can legally exclude others from reproducing, manufacturing, selling, or dealing in the said registered Design without his prior consent.
- The Design registration is particularly useful for entities where the shape of the product has aesthetic value and the entity wishes to have exclusivity over the said novel and original Design applied to its product(s) or article(s)

ENFORCEMENT OF DESIGN RIGHTS

- Once the applicant has been conferred with the rights over a specific Design, he has the right to sue the person (natural/entity) if the pirated products of his registered design are being used.
- He can file the infringement case in the court (not lower than District Court) in order to stop such exploitation and for claiming any damage to which the registered proprietor is legally entitled.
- The court will ensure first that the Design of the said product is registered under the Designs Act, 2000.
- If the Design is found not registered under the Act, there will not be legal action against the infringer.
- If the infringer is found guilty of piracy or infringement, the court can ask him to pay the damage (₹ 50,000/-) in respect of infringement of one registered Design.

NON-PROTECTABLE INDUSTRIAL DESIGNS INDIA

- Any Industrial Design which is against public moral values.
- Industrial Designs including flags, emblems or signs of any country.
- Industrial Designs of integrated circuits.
- Any Design describing the __process of making of an article__.
- Industrial Designs of – books, calendars, certificates, forms and other documents, dressmaking patterns, greeting cards, leaflets, maps and plan cards, postcards, stamps, medals.

- The artistic work defined under Section 2(c) of the Copyright Act, 1957 is not a subject matter for registration for Industrial Designs, such as:
 - Paintings, sculptures, drawings including a diagram, map, chart or plan.
 - Photographs and work of architecture.
 - Any other work related to artistic craftsmanship.
- Industrial Designs does not include any Trademark (The Designs Act, 2000)

PROTECTION TERM

- The outer Shape or Design of a product makes it more appealing and acts as the value-adding factor to the product. Therefore, there is a need to protect one's creation from being used by third parties without consent from the original creator.
- The registered Designs are protected for 10 years in India and can be extended by 5 years after making a renewal application

PROCEDURE FOR REGISTRATION OF INDUSTRIAL DESIGNS

Prior Art Search

- Before filing an application for registration of Industrial Designs, it is prudent to ensure that the same or similar Design has not been registered earlier.
- This search can be carried out using various search engines, such as: Design Search Utility (CGPDTM), Global Design Database (WIPO), etc.

Application for Registration

- Once the applicant is satisfied that his Design is novel and significantly distinguishable from other Designs, he can proceed with filing an application for Design registration.
- The application for registration of Design can be filed by an individual, small entity, institution, organization and industry. The application may be filed through a professional patent agent or legal practitioner.
- If the applicant is not a resident of India, an agent residing in India has to be employed for this purpose.

- The applicant submits the registration application at the Design Office Deputy Controller of Patents & Designs, Patent Office, Intellectual Property Office Building, CP-2 Sector V, Salt Lake City, Kolkata- 700091.
- After the application has been filed, an officer (examiner) analyses the application for qualifying the minimum standards laid down for eligibility criteria for registration.
- In case of any query, the same is sent to the applicant and he is supposed to respond within 6 months from the objection raised.
- Once the objections are removed, the application is accepted for registration

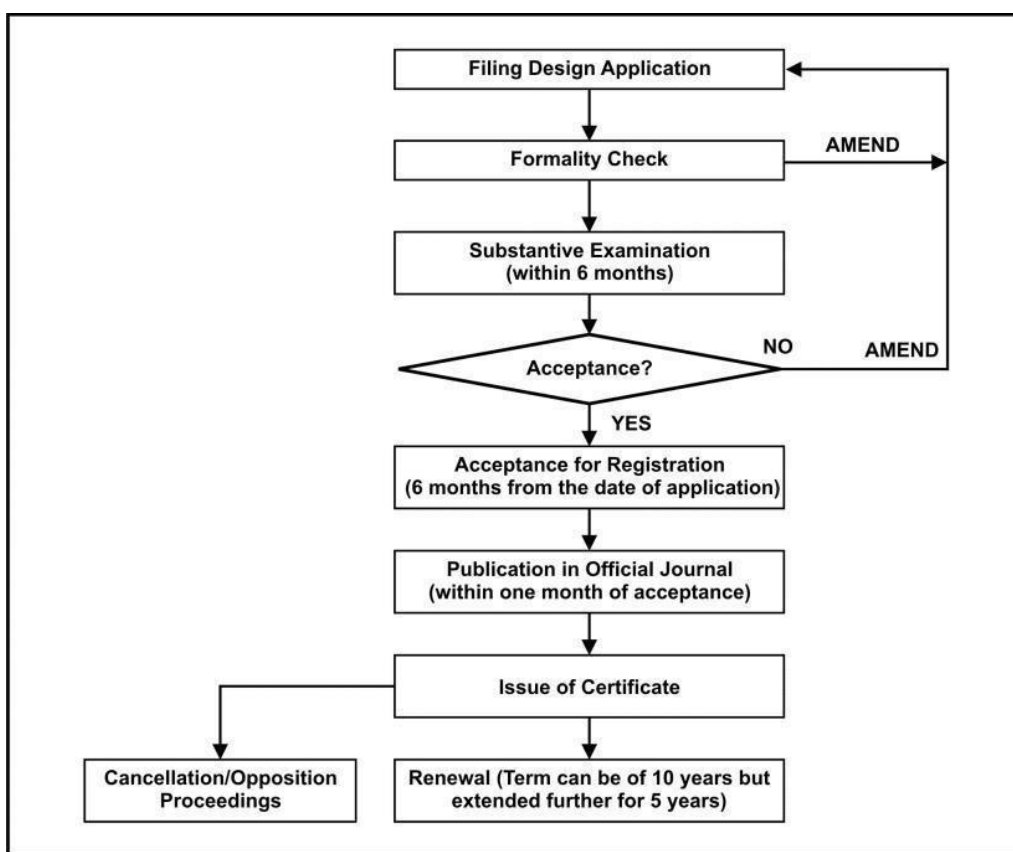


Fig: Process of Design registration

DURATION OF THE REGISTRATION OF A DESIGN

- Initially, the Design registration is valid for ten years from the date of registration.
- In the case wherein the priority date has been claimed, the duration of the registration is counted from the priority date.

- The period of registration may be extended further for five years.
- An application has to be made in Form-3 accompanied by prescribed fees to the Controller General before the expiry of the said initial period of ten years

IMPORTANCE OF DESIGN REGISTRATION

- Registration of Design ensures the exclusive rights of the applicant on the Design.
- The owner can prevent the registered Design products from piracy and imitation.
- This helps the owner to boost the sale of the products and establish goodwill in the market.

CANCELLATION OF THE REGISTERED DESIGN

The registration of a Design may be cancelled at any time. The petition has to be filed in Form-8 with prescribed fee to the Controller of Designs.

The application can be made on the following grounds:

- Design has already been registered
- Design has been published in India or elsewhere before the date of registration.
- Design is not novel and original
- It is not a Design under Clause (d) of Section 2.

APPLICATION FORMS

There are a total of 24 forms pertaining to Industrial Designs. A list of important forms is mentioned below.

Sl. No	Name of the form	Form No	Fee in Rs		
			Natural person	Small Entity	Large Entity
1	Application for registration of Design.	Form - 1	1000	2000	4000
2	Application for renewal of Design.	Form -3	2000	4000	8000
3	Application for the Restoration of Design	Form - 4	1000	2000	4000
4	Petition for	Form - 8	1500	3000	6000

	cancellation for registration of a Design.				
5	Notice of intended exhibition or publication of unregistered Design.	Form - 9	500	1000	2000
6	Application for entry of name of proprietor or part proprietor in the Register.	Form - 11	500	1000	2000
7	Request for correction of clerical error.	Form - 14	500	1000	2000
8	Request for certified copy.	Form - 15	500	1000	2000
9	Application for rectification of Register.	Form - 17	500	1000	2000
10	Notice of opposition.	Form - 19	100	200	400

CLASSIFICATION OF INDUSTRIAL DESIGNS

- Designs are registered in different classes as per the Locarno Agreement, 1968; <https://www.wipo.int/classifications/locarno/loc pub/en/fr/>).
- It is used to classify goods for the registration of Industrial Designs as well as for Design searches.
- The signatory parties have to indicate these classes in the official documents too. The classification comprises a list of classes and subclasses with a list of goods that constitute Industrial Designs.
- There are 32 classes and 237 subclasses that can be searched in two languages i.e. English and French.
- For example, Class 1 includes foodstuff for human beings, foodstuffs for animals and dietetic foods excluding packages because they are classified under Class 9 (Bottles, Flasks, Pots, Carboys, Demijohns, and Pressurized Containers). Class 32 classifies the Design of graphic symbols and logos, surface patterns, ornamentation

DESIGNS REGISTRATION TRENDS IN INDIA

- The below figure represents the statistics for Industrial Designs (filed, examined and registered) for the period 2010-20.
- During this period, an increase of 88%, 117% and 33% was observed in the parameters of Designs filed, examined and registered, respectively.
- In all three parameters, the graph depicts a similar pattern (more or less) with the highest numbers observed in 2019-20 for Designs filed (12,268), examined (13,644) and registered (14,272).

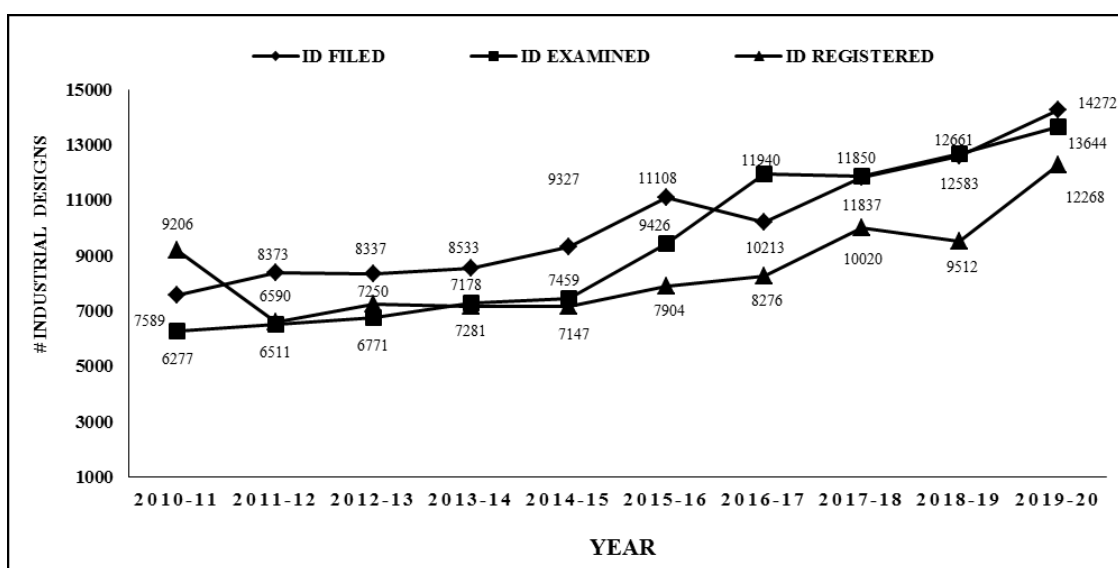


Fig: Industrial Designs Profile in India

INTERNATIONAL TREATIES

The WIPO has put in place two important treaties (international) dealing with the smooth functioning of various aspects of Industrial Designs:

- Hague Agreement for international registration (1925)
(<https://www.wipo.int/treaties/en/registration/hague/>)
- Locarno Agreement (1968) for international classification
(<https://www.wipo.int/treaties/en/classification/locarno/>)

FAMOUS CASE LAW: APPLE INC. VS. SAMSUNG ELECTRONICS CO.

- In 2011, Apple Inc. filed a case against Samsung Electronics Co. in the United States District Court for the Northern District of California for infringing their Designs and Utility Patents of the user interface like screen app grid and tap to zoom.
- As evidence, Apple Inc. submitted the side-by-side image comparison of the iPhone 3GS and the i9000 Galaxy S to demonstrate the alleged similarities in both models.
- However, later it was found that the images were tempered by the Apple Company to match the dimensions and features of the controversial Designs.
- So the counsel for Samsung Electronics blamed Apple of submitting false and misleading evidence to the court and the company countersued the Apple Company in Seoul, South Korea; Tokyo, Japan; and Mannheim, Germany, United States District Court for the District of Delaware, and with the United States International Trade Commission (ITC) in Washington D.C.
- The proceedings continued for the 7 years in various courts. In June 2018 both companies reached for a settlement and Samsung was ordered to pay \$539 million to Apple Inc. for infringing on its patents.

GEOGRAPHICAL INDICATIONS

- A GI is defined as a sign which can be used on products belonging to a particular geographical location/region and possesses qualities or a reputation associated with that region.
- In GI, there is a strong link between the product and its original place of production.

ACTS, LAWS AND RULES PERTAINING TO GI

- In India, GI was introduced in 2003 and is governed under the Geographical Indications of Goods (Registration & Protection) Act, 1999 and the Geographical Indications of Goods (Registration & Protection) Rules, 2002.

OWNERSHIP OF GI

- The ownership/holders of GI (registered) can be of the producers, as a group/association/cooperative society or association or in certain cases, government.

RIGHTS GRANTED TO THE HOLDERS

- **Right to grant the license to others** - The holder has the right to gift, sell, transfer/grant a license, mortgage or enter into any other arrangement for consideration regarding their product. A license or assignment must be given in written and registered with the Registrar of GI, for it to be valid and legitimate.
- **Right to sue** - The holder of GI has the right to use and take legal action against a person who uses the product without his consent.
- **Right to exploit** - The holder of GI can authorize users with exclusive right to use goods for which the GI is registered.
- **Right to get reliefs** - Registered proprietors and authorized users have the right to obtain relief concerning the violation of such GI products

REGISTERED GI IN INDIA

- GI products registered in India belong to the domains of handicrafts, agricultural, food stuffs, alcoholic beverages, etc.
- The first GI tag was granted in 2004 to Darjeeling Tea and the latest being Kashmir Saffron and Manipur Black rice (Chakhao) in May 2020. A total of 370 GI have been registered in India till May 2020.
- Nearly 58% of these belong to handicrafts, followed by agriculture (30%).
- Other categories belong to food stuff, manufacturing, and natural goods.
- In the Handicraft category, Tamilnadu holds the maximum number (21) of GI followed by Uttar Pradesh (20) and Karnataka (19).
- A few stands out GI are mentioned in the below table

GI	Type	State
Darjeeling Tea	Agriculture	West Bengal

Mysore Silk	Handicraft	Karnataka
Kashmir Pashmina	Handicraft	Jammu & Kashmir
Banaras Brocades and Sarees	Handicraft	Uttar Pradesh
Naga Mircha	Agriculture	Nagaland
Tirupathi Laddu	Foodstuff	Andhra Pradesh
Phulkari	Handicraft	Punjab, Haryanam Rajasthan
Basmathi	Agriculture	India

IDENTIFICATION OF REGISTERED GI

- Registered GI products are granted a tag, which is printed on the registered products. The tag confirms the genuineness of the product in terms of its production (by set standards) and location of production.
- Non-registered GI products cannot use/exploit this tag.
- By and large, GI tags represent the place of origin (of the product) along with cultural and/or historical identity e.g. Darjeeling Tea, Mysore Silk, Tirupathi Laddu, etc.
- In India GI tags are issued by the Geographical Indication Registry under the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry.
- The head of GI registry is at Geographical Indications Registry Intellectual Property Office Building, Industrial Estate, G.S.T Road, Guindy, and Chennai - 600032.
- GI registered products can be grown / produced in any part of the world using standards laid down by the GI Registry.
- However, these products cannot be labeled as GI as they are not produced/ manufactured in a specific geographical location, as mentioned in the official records maintained by the GI Office of GI.
- For example, plants of Darjeeling Tea can be grown in any part of India. But the tea leaves of these plants cannot be sold under the brand name of Darjeeling Tea, as the concerned plants were not grown in the soil and climate of the Darjeeling area.

CLASSES OF GI

- GI certified goods are classified under 34 different classes, such as Class 1 is for chemicals used in industry, science, photography, agriculture, horticulture and forestry; unprocessed artificial resins, unprocessed plastics; manures; fire extinguishing compositions; tempering and soldering preparations; chemical substances for preserving foodstuffs; tanning substances; adhesives used in industry.
- Class 33 is for alcoholic beverages (except beers) and Class 34 is related to tobacco, smoker's articles and matches. More details can be extracted from the official website of CGPDTM Office

NON-REGISTERABLE GI

For GI registration, the indications must fall within the scope of section 2(1) (e) of GI Act, 1999. Being so, it has to also satisfy the provisions of Section 9, which prohibits registration of a GI mentioned below:

- The use of which would be likely to deceive or cause confusion.
- The use of which would be contrary to any law.
- Which comprises or contains scandalous or obscene matter
- Which comprises or contains any matter likely to hurt the sentiments of society
- Religious susceptibilities of any class or section of the citizens of India
- Which are determined to be generic names or indications of goods and are, therefore, not or ceased to be protected in their country of origin or which have fallen into disuse in that country.

PROTECTION OF GI

- The IP rights to GI are enforced by the court of law of the concerned country.
- The GI registration of a product has certain advantages.
- It enables to identify pirated/non-genuine stuff, provides more commercial value to the product, and also strengthens the case if it reaches the judicial courts.
- The two common methods of protecting a GI are:

- Sui generis systems (i.e. special regimes of protection) and under certification or collective mark systems. Many countries, including India to protect GI by using the sui generis system.
- This decision was taken after the TRIPS agreement (1995) and an option was given to the countries to choose either TRIPS standards or the sui generis system.
- This was decided by considering the fact that every country has different legislation and geographical structures & resources. Therefore, this system is not uniform in all countries and varies according to the jurisdiction and legislation of the particular country.

COLLECTIVE OR CERTIFICATION MARKS

- Certification marks aim to certify the products comply with specific quality standards irrespective of their origin. These standards include permitted materials and manufacturing methods.
- Therefore, the purpose of certification marks is to distinguish certified goods from non-certified ones.
- Collective marks are owned by associations ensuring compliance with the agreed standards.
- Collective marks signify that a good or service originates from a member of a particular association.
- The Collective mark is used by cooperating enterprises that have agreed to comply with defined quality standards for goods or services that share common characteristics

ENFORCEMENT OF GI RIGHTS

- The rights to GI protection are typically enforced by the court of law.
- The sanctions provided could be civil (injunctions restraining or prohibiting unlawful acts, actions for damages, etc.), criminal, or administrative.

PROCEDURE FOR GI REGISTRATION DOCUMENTS

- Prior to filing an application for registering GI, it is prudent to search whether the concerned GI is already protected or not. This can be done by using search engines created by WIPO.
- The list of registered GI in India can be accessed from the official website of CGPDTM.
- Once the prior search for registered GI is done, the applicant has to file an application.
- The application for GI can be forwarded by an individual or an organization or authority of people established under Indian law.
- The application in a prescribed format is submitted to the Registrar, Geographical Indications along with the prescribed fee.
- In the application, the applicant needs to mention the interest of the producers of the concerned product.
- The application should be duly signed by the applicant or his agent with all the details about the GI that how its standard will be maintained.
- The submission of three certified copies of the map of the region where the GI belongs is mandatory. Once the application is filed at GI Registry, the Examiner will scrutinize the application for any deficiencies or similarities.
- If the examiner finds any discrepancy, he will communicate the same to the applicant, which is to be replied within one month of the communication of the discrepancy.
- Once the examiner is satisfied with the response/s, he files an examination report and hands over the same to the Registrar. Once again, the application is scrutinized.
- If need be, the applicant is asked to clear any doubts/objections within two months of the communication otherwise, the application will be rejected.
- After getting a green signal from the Registrar, the application is published in the official Geographical Indication Journal for seeking any objections to the claims mentioned in the application.
- The objections have to be filed within four months of the publication. If no opposition is received, the GI gets registered by allotting the filing date as the registration date.
- Initially, GI is registered for ten years but is renewable on the payment of the fee.

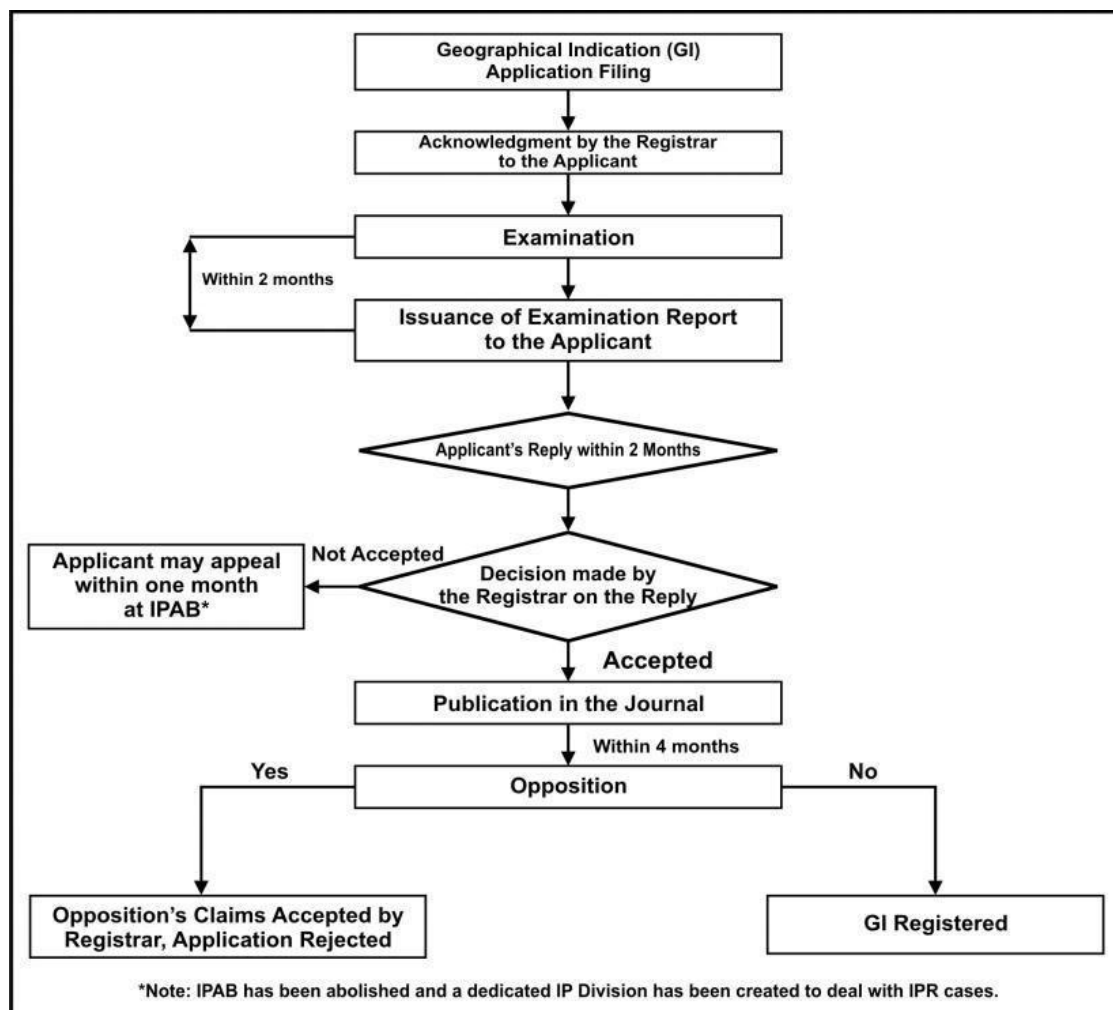


Fig: Procedure for GI registration document

DOCUMENTS REQUIRED FOR GI REGISTRATION

- Details about the applicant's name, address and particulars.
- Application form GI-1A.
- Statement about the designated goods being protected under GI
- Class of goods
- Affidavit to establish the claim of genuinely representing the interest of the producers
- Characteristics of GI
- The special human skill required (if any)

Form No	Title	Requisite Fee in Rs
GI - 1	Application for the registration of a Geographical Indication for goods included in one class.	5000
	Application for the registration of a Geographical Indication for goods included in one class from a Convention country.	5000
	A single application for the registration of a Geographical Indication for goods in different classes.	5000 for each class
	A single application for the registration of a Geographical Indication for goods in different classes from a Convention country	5000 for each class
GI – 2	Notice of opposition to the registration of a Geographical Indication or an opposition or an authorized user.	1000 for each class
	Form of counter-statement	1000
	Application for extension of time for filing notice of opposition	300
GI – 3	Application for the registration of an authorized user of a registered Geographical Indication.	500
	Request for issuance of a registration certificate as an authorized user.	100
	For renewal of an authorized user.	1000
GI – 4	Renewal of the registration of a Geographical Indication at the expiration of the last registration	3000
	Application for restoration of a Geographical Indication or an authorized user removed from the Register.	1000 + applicable renewal fee
	Application for renewal within six months from the expiration of last registration of Geographical Indication.	3500
GI – 8	Application for registration of a Geographical Indications agent.	1000
GI - 10	Application for cancellation of an entry in the Register or to strike out goods	300

GI ECOSYSTEM IN INDIA

- India is among the geographically and traditionally rich countries.
- The scope of generating GI products in India is enormous. These products can contribute to the economic development of a particular region or society.
- However, till June 2021, a total of 370 GI have been registered in India, which is much below its potential.
- The below Figure represents the statistics for GI (filed, and registered) for the period 2010-20. Maximum number (148) of GI was filed in 2011-12 whereas, minimum number (17) was observed in 2015-16.
- Not much change in the number of GI registrations was observed during the period 2010-20. Each year the number hovered around in the twenties, with maximum registrations (34) seen in 2016-17.

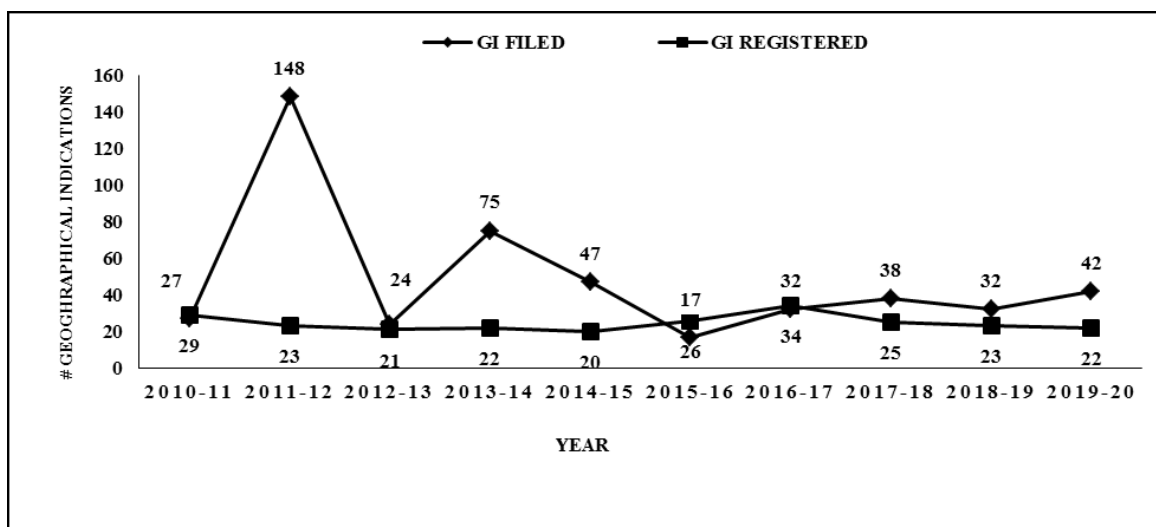


Fig: GI Profile (India) for the period 2010-2020

CASE STUDIES ON PATENTS

- Case study of Curcuma (Turmeric) Patent,
- Case study of Neem Patent
- Case study of Basmati patent