
Module-3 Introduction to IPR and Patents (5 hours)

Introduction to Intellectual Property: Types of IP, Role of IP in the economic and cultural development of the society, IP governance, IP as a global indicator of innovation, National IPR Policy in India.
Patents: Conditions for patent, Non-patentable matters, Inventions Eligible for Patenting, Salient features of the Indian Patent 1970, Process of patenting, Types of patent applications, Patent infringements. Case examples.

3.1 Introduction to Intellectual Property

3.1.1 Introduction

Human Beings are distinguished from animals by the intellectual capability endowed on them by the Almighty. The Human Beings have thus elevated themselves to the present 'Civilized State' solely on account of exercise of their intellectual capabilities.

Intellectual Property, which is a product of intellectual capability and labour, is therefore, another class of property and it emanates primarily from the activities of human intellect. Intellectual Property relates to information which can be incorporated in tangible objects and reproduced in different locations. For Example, Patents, Designs, Trade Marks and Copyright. The rights accrued on the owner of such property (Intellectual Property) are termed as Intellectual Property Rights (IPR).

3.1.2 Meaning

Intellectual Property (IP) refers to the creations of the human mind, like inventions, literary and artistic works, and symbols, names, images and designs used in commerce. It can be divided into two categories viz., Industrial property, which includes inventions (patents), trademarks, industrial designs, and geographic indications of source; and Copyright, which includes literary and artistic works such as novels, poems and plays, films, musical works, artistic works, such as, drawings, paintings, photographs and sculptures, and architectural designs. Rights related to copyright include those of performing artists in their performances, producers of phonograms in their recordings, and those of broadcasters in their radio and television programs. Intellectual property rights protect the interests of creators by giving them property rights over their creations.

The most noticeable distinction between Intellectual Property and other forms of properties is that Intellectual Property is intangible, that is, it cannot be defined or identified by its own physical parameters. It must be expressed in some discernible way to be protectable. Generally, it encompasses four separate and distinct types of intangible properties, namely, Patent, Trademark, Copyright, and Trade Secret, which collectively are referred to as "Intellectual Property." However, the scope and definition of Intellectual Property is constantly evolving with the inclusion of newer forms under the gambit of Intellectual Property. In recent times, Geographical Indications, Protection of plant varieties, Protection for semi-conductors and integrated circuits, and Undisclosed Information have been brought under the umbrella of Intellectual Property.

3.1.3 Relevance

In today's competitive world 'Innovation' is the buzz word and is the main requirement for the survival of every business. Identifying, developing, and leveraging innovations provide a competitive edge to the business and it aids in its long-term success as well. There is a misnomer that Intellectual property is limited to technology companies. However, the fact is that it is a necessity and is very much valuable

for every business which invests huge sums in its research and development programmes in order to create new and useful indigenous products and services.

Thus, a company ought to be proactive in implementing its IP solutions to identify novel innovations, and thus increase its revenues. A well-defined IP goal not only helps in achieving business objectives but also helps in positioning the company/organisation as a business leader in the marketplace. With growth in its business revenues, company's IP strategy can include protection of certain unique aspects of its assets which may also result in fostering innovations to explore new geographies. This can be achieved through licensing or joint ventures to create novel solutions and that satisfy the unmet needs of the society.

There is also a need for a company to evaluate its existing Intellectual Property in order to ensure that it is in line with its business objectives. Such an activity helps the company to identify new ways to leverage the Intellectual Property through licensing opportunities available to it. Companies must always be on a lookout for some new avenues to expand their product offerings, increase their sales revenue, and foray into new markets.

3.1.4 Role of Intellectual Property (IP) in Economic and Cultural Development of Society

1. **Encourages Innovation and Creativity** – IP rights protect the creations of inventors, artists, and innovators, motivating them to develop new technologies, products, and cultural works.
2. **Promotes Economic Growth** – Patents, copyrights, and trademarks allow creators to commercialize their work, leading to new industries, job creation, entrepreneurship, and improved competitiveness.
3. **Attracts Investment** – Strong IP systems encourage domestic and foreign investments, as businesses feel secure in protecting their innovations.
4. **Supports Cultural Development** – Copyright protection safeguards literature, music, films, and art, enabling cultural diversity, preservation of traditions, and encouragement of artistic talent.
5. **Knowledge Sharing and Technology Transfer** – IP systems strike a balance between rewarding creators and allowing public access after protection expires, facilitating broader knowledge dissemination.
6. **Consumer Confidence** – Trademarks ensure product authenticity and quality, protecting consumers from counterfeit goods and enhancing trust in the market.

In summary: Intellectual Property plays a dual role – it **fuels economic development** through innovation, trade, and employment, while also **enriching cultural growth** by safeguarding creativity, heritage, and artistic expression.

3.1.5 Types of Intellectual Property (IP):

India remains one of the world's most growing economies in past 20 years and the ballgame of entrepreneurship and industries is a key element for contribution outstanding growth of Indian economy. On one hand, where businesses and their successful run is vital to the growth of economy; on the same hand, a structured set of IP protection helps in the advancement and development of businesses under a hassle-free environs. Henceforth, aligning the International practices, India too is having a systemized legal system to take care of IP protection. The different types of IP in India are:

a. Patent: A patent grants proprietary rights on an invention, allowing the patent holder to exclude others from making, selling, or using the invention. Inventions allow many businesses to be successful because they develop new or better processes or products that offer competitive advantage on the marketplace. One could get a patent by filing a patent application with the Patent Office in India. The application for the grant of patent can be made by either the inventor or by the assignee or legal representative of the inventor. In India, the term of the patent is for 20 years. The patent is renewed every year from the date of patent.

As per the Patents Act, 1970, "invention" includes any new and useful;

- art, process, method or manner of manufacture;
- machine, apparatus or other article;
- substance produced by manufacture, and includes any new and useful improvement of any of them, and an alleged invention;

The definition of the word "Invention" in the Patents Act, 1970 includes the new product as well as new process. Therefore, a patent can be applied for the "Product" as well as "Process" which is new, involving inventive step and capable of industrial application can be patented in India.

b. Copyrights: Copyrights protect original works of authorship, such as literary works, music, dramatic works, pantomimes and choreographic works, sculptural, pictorial, and graphic works, sound recordings, artistic works, architectural works, and computer software. With copyright protection, the holder has the exclusive rights to modify, distribute, perform, create, display, and copy the work.

The greatest fear and challenges to the copyright industry is the piracy of works whether, books, musical works, films, television programmes or computer software or computer database. Copyright in India is governed by Copyright Act, 1957. This Act has been amended several times to keep pace with the changing times. As per this Act, copyright grants author's lifetime coverage plus 60 years after death under certain classes whereas in other classes it is 60 years in toto.

c. Trademarks: A trademark is a word, phrase, symbol, or design that distinguishes the source of products (trademarks) or services (service marks) of one business from its competitors. In order to qualify for protection, the mark must be distinctive. For example, the Nike "swoosh" design identifies athletic footwear made by Nike.

As per The Trade Marks Act 1999 ("TM Act") Trademarks mean any words, symbols, logos, slogans, product packaging or design that identify the goods or services from a particular source. Trademark means a mark capable of being represented graphically and which is capable of distinguishing the goods or services of one person from those of others and may include shape of goods, their packaging and combination of colors. The renewable term of registration of a trademark is ten years.

Any business entity needs to be cautious in selecting its trade name, brands, logos, packaging for products, domain names and any other mark which it proposes to use. One must do a proper due diligence before adopting a trademark.
Examples of well-known trademarks are Google, Tata, Yahoo, Pepsi, Reliance, etc.

d. Industrial Designs: Today, industrial design has become an integral part of consumer culture where rival articles compete for consumer's attention. It has become important, therefore, to grant

adequate protection to an original industrial design. In India Designs Act, 2000 has been enacted for the purpose.

The design law excludes from its purview the functioning features of an article and grants protection only to those which have an aesthetic appeal. A table, for example, would have a flat surface on which other objects can be placed. This is its functional element. But its shape, colour or the way it is supported by legs or otherwise, are all elements of design or artistic elements and therefore, registrable as design if unique and novel.

Furthermore, once a design is registered, the registered proprietor is afforded protection for an initial period of 10 (ten) years, which is extendable (upon filing an application for extension) for a further period of 5 (five) years.

e. Geographical Indications: The Geographical indication of Goods (Registration and Protection) Act, 1999 provides adequate protection to geographical indications in India. A 'Geographical Indication' is defined as 'an indication which identifies such goods as agricultural goods, natural goods or manufactured goods as originating, or manufactured in the territory of country, or a region or locality in that territory, where a given quality, reputation or other characteristic of such goods is essentially attributable to its geographical origin'. The GI Act covers only goods such as agricultural goods, food stuff, handicraft goods, manufactured goods, and natural goods.

A registered geographical indication is awarded protection for a term of ten (10) years with the option of renewing and extending such protection for further tenures of ten (10) years from the date of expiration of the original registration.

Some examples are Darjeeling Tea, Banarsi Saree, Basmati Rice, etc.

f. **Semiconductor Integrated Circuits Layout- Design:** A 'semiconductor integrated circuit' is defined as 'a product having transistors and other circuitry elements which are inseparably formed on a semiconductor material or an insulating material or inside the semiconductor material and designed to perform an electronic circuitry function'.

Under the **Semiconductor Integrated Circuits Layout- Design Act, 2000 ("SICLD Act"), A**ll layout-designs capable of being registered are required to be original; commercially unexploited anywhere in India and in any convention countries; inherently distinctive and inherently distinguishable from other registered layout- designs. the protection afforded to registered layout-designs is for a period of 10 (ten) years.

g. **Plant Varieties and Farmer's Rights: Protection of Plant Varieties and Farmers Rights** (PPV&FR) Act, 2001 permits any breeder, farmer and any person as authorized, to apply for registration of a new plant variety. A new plant variety is registrable if it satisfies the conditions of 'novelty, distinctiveness, uniformity and stability'. recognize rights of Indian farmers and to provide protection to plant varieties in order to encourage the growth and development of more plant varieties.

The validity of registration for the protection of a plant variety is for a period of nine (18) years in the case of trees and vines, and for a period of six (15) years in the case of crops, with the option of renewal of such registrations.

3.1.6 Role of International Institutions

Intellectual property has a dual nature, i.e. it has both a national and international dimension. For instance, patents are governed by national laws and rules of a given country, while international conventions on patents ensure minimum rights and provide certain measures for enforcement of rights by the contracting states. Strong protection for intellectual property rights (IPR) worldwide is vital to the future economic growth and development of all countries. Because they create common rules and regulations, international IPR treaties, in turn, are essential to achieving the robust intellectual property protection that spurs global economic expansion and the growth of new technologies.

List of some leading Instruments concerning Intellectual Property Rights are:

1) The Paris Convention for the Protection of Industrial Property
2) The Berne Convention for the Protection of Literary and Artistic Works
3) The WIPO Copyright Treaty (WCT)
4) The Patent Cooperation Treaty (PCT)
5) Budapest Treaty on International Recognition of Deposit of Microorganisms for Purposes of Patent Procedure
6) The Madrid Agreement Concerning the International Registration of Marks and the Protocol Relating to the Madrid Agreement
7) The Hague Agreement Concerning the International Deposit of Industrial Designs
8) The Trademark Law Treaty (TLT)
9) The Patent Law Treaty (PLT)
10) Treaties on Classification
11) Special Conventions in Field of Related Rights: The International Convention for Protection of Performers, Producers of Phonograms and Broadcasting Organizations ("the Rome Convention")
12) The WIPO Performances and Phonograms Treaty (WPPT)
13) The International Convention for the Protection of New Varieties of Plants
14) The Agreement on Trade-Related Aspects of Intellectual Property Rights ("TRIPS") and WIPO-WTO Cooperation .

3.1.7 IP system in India (IP Governance)

(i). Patents: (The Patents Act, 1970)

The Indian Patent Office, under the Controller General of Patents, Designs & Trade Marks, administers the patent system. India follows a first-to-file system, where the first person to file a patent application for an invention is granted the rights. Patent protection is typically granted for a period of 20 years from the filing date.

(ii). Trademarks: (The Trade Marks Act, 1999)

The Office of the Controller General of Patents, Designs & Trade Marks oversees trademark registration. Trademark protection is granted for a period of 10 years, renewable indefinitely. The system aims to prevent unauthorized use of trademarks and protect brand identities.

(iii). Copyrights: (The Copyrights Act, 1957)

Copyright protection in India is governed by the Copyright Act. It covers literary, artistic, and musical works, as well as computer software. Copyright protection is generally granted for the lifetime of the creator plus 60 years.

(iv). Designs: (The Design Act, 2000)

The Design Act, 2000 governs the registration and protection of industrial designs in India. Registered designs are protected for an initial period of ten years, extendable for another five years.

(v). Geographical Indications (GIs): The Geographical Indications of Goods (Registration and Protection) Act, 1999

India has a system for the protection of Geographical Indications, ensuring that products associated with a particular region are protected from unauthorized use.

A registered geographical indication is awarded protection for a term of ten (10) years with the option of renewing and extending such protection for further tenures of ten (10) years from the date of expiration of the original registration.

(vi) Plant Varieties: The Protection of Plant Varieties and Farmer's Rights Act, 2001 ("Plant Varieties Act")

The Protection of Plant Varieties and Farmers' Rights Act 2001 is an Act to provide for the establishment of an effective system for protection of plant varieties, the rights of farmers and plant breeders and to encourage the development of new varieties of plants.

The validity of registration for the protection of a plant variety is for a period of nine (18) years in the case of trees and vines, and for a period of six (15) years in the case of crops, with the option of renewal of such registrations.

(vii)). **The Semiconductor Integrated Circuits Layout- Design Act, 2000 ("SICLD Act")**

Under the SICLD Act, all layout-designs capable of being registered are required to be original; commercially unexploited anywhere in India and in any convention countries; inherently distinctive and inherently distinguishable from other registered layout- designs protection afforded to registered layout-designs is for a period of 10 (ten) years.

Enforcement:

The IP system in India is enforced through legal mechanisms, including civil and criminal remedies for infringement.

3.1.8 Intellectual Property (IP) as a Global Indicator of Innovation:

1. **Patent Filings as Innovation Measure** – The number of patents filed worldwide reflects the level of research, technological advancement, and innovative activity in a country.
2. **Copyright and Creative Works** – Growth in copyrights registered (books, films, music, software) indicates cultural and creative innovation in society.
3. **Trademarks and Branding** – Trademark registrations show the emergence of new businesses, products, and services, acting as a sign of entrepreneurial innovation.
4. **Geographical Indications (GIs)** – Recognition of unique regional products demonstrates innovation in preserving traditional knowledge and local industries.
5. **Benchmark for Competitiveness** – Global indices like the **Global Innovation Index (GII)** use IP data (patents, trademarks, designs) as key metrics to rank countries' innovation performance.
6. **Encourages R&D Investment** – Countries with higher IP activity attract more foreign investment and collaborations, strengthening their global innovation standing.

3.1.9 National IPR Policy in India

The National Intellectual Property Rights Policy is a policy document released by the Government of India in 2016. Its aim is to provide a roadmap for India's IPR regime. It takes into account national development priorities and the global economic scenario.

- The **Department for Promotion of Industry and Internal Trade (DPIIT)** under the Ministry of Commerce **adopted the National Intellectual Property Rights (IPR) Policy in 2016.**
- The main goal of the policy is **"Creative India; Innovative India".**
- The **policy covers all forms of IP,** seeks to create synergies between them and other agencies, and **sets up an institutional mechanism for implementation and review.**
- **DPIIT is the nodal department for IPR development in India** and the **Cell for IPR Promotion & Management (CIPAM) under DPIIT is the single point of reference** for implementing the policy.
- India's IPR regime complies with **World Trade Organisation's (WTO)** agreement on **Trade Related Aspects of Intellectual Property (TRIPS).**

Objectives of National IPR Policy:

There are seven important objectives of the IPR policy:

- **IPR Awareness:** Outreach and promotion are important to create public awareness about the economic, social and cultural benefits of IPRs among all sections of society.
- **Generation of IPRs**: To stimulate the generation of IPRs.
- **Legal and Legislative Framework**: To have strong and effective IPR laws, which balance the interests of rights owners with larger public interest.
- **Administration and Management:** To modernise and strengthen service-oriented IPR administration.
- **Commercialisation of IPRs:** Get value for IPRs through commercialisation.
- **Enforcement and Adjudication:** To strengthen the enforcement and adjudicatory mechanisms for combating IPR infringements.
- **Human Capital Development**: To strengthen and expand human resources, institutions and capacities for teaching, training, research and skill building in IPRs.

Salient Features of National IPR Policy:

The salient features of the IPR policy have been given below:

- National IPR Policy aims to boost innovation and entrepreneurship while safeguarding public interest by making IPR a marketable fiscal asset.
- The special focus is on the following:
  - creating awareness and efficient implementation of IPRs and
  - promoting IP commercialization through incentives.
- The Department of Industrial Policy and Promotion (DIPP) will be the nodal agency for all IPR issues, including copyrights.
- Trademark offices will expedite scrutiny and registration, aiming to reduce the time.
- Copyright protection will cover films, music, and industrial drawings.
- Domestic IPR filings for the entire value chain, from creation to commercialization, will be enabled.

- An efficient loan guarantee scheme will support start-ups.
- The policy grants legislative flexibility to the GoI in global treaties and TRIPS agreements.

Achievements under the new National IPR policy:

- **Reduction in pendency of IPR applications:** The pendency of IPR applications has reduced significantly since the implementation of the new National IPR Policy. For example, the pendency of patent applications has reduced from 1,97,934 as on 31.3.2016 to 1,39,274 as on 31.10.2022.
- **Increase in IPR filings:** There has been a significant increase in IPR filings since the implementation of the new National IPR Policy. For example, the number of patent filings has increased by nearly 7% in the first 8 months of 2022-23 vis-à-vis the corresponding period of 2021-22.
- **Strengthening of institutional mechanisms:** The new National IPR Policy has led to the strengthening of institutional mechanisms for the administration and protection of IPRs. For example, the Intellectual Property Office has been revamped. The number of examiners has been increased.
- **Increased awareness about IPRs:** There has been an increase in awareness about IPRs among the public since the implementation of the new National IPR Policy. This is due to the various awareness-raising campaigns and initiatives undertaken by the government.

National Intellectual Property Rights Policy – The Way Forward:

- The academic curricula should be rebooted, and the innovation environment should be stimulated in schools.
- An appropriate resolution mechanism for resolving issues related to IPR is required.
- India will not be able to take full benefit of the transformative gains of a robust IP system unless and until it addresses gaps in its IP laws and provisions.
- The success of India's flagship schemes – Make in India and Startup India schemes depends on the boost of the innovation ecosystem with improved IPR safeguarding.
- More awareness is required for the generation, protection, and execution of IPRs to boost the Indian industry not only to innovate but also to safeguard and enforce their innovations.

3.2 Patents

3.2.1 Concept

Nature of a Patent.- A Patent is a grant (in the form of a document) by the Government, given for disclosing a new invention by an Inventor or a group of Inventors or otherwise an applicant. Once the Patent is issued, it gives to the Inventor or the applicant, as the case may be, an exclusive right to sell, manufacture and use the invention disclosed in the Patent. The legal exclusive right in the Patent can be exercised by the Inventor/applicant only in the country which grants the right. This right can be exercised only for a limited period of time, normally known as the 'Term of the Patent'. Therefore, on the expiry of the Term of the Patent, the invention becomes a public property.

Patent vis-à-vis Property Rights.- A Patent is similar to a property, like a car, a house or a business. When one receives a Patent, the person would have achieved something that few have accomplished. Therefore, securing a Patent is an achievement worthy of celebration. When someone infringes the

Patent of others, it is similar to the act of stealing somebody's car, house or business. For the term prescribed under the Patents Act, 1970, the legal rights under the Patent are the property of the Patent Holder, provided the Patent is in force, meaning that the prescribed renewal fees are paid within the prescribed period.

Rights vested on the Patentee.- Patent represent one of the most powerful Intellectual Property Rights. These rights can be a very important economic tool if used effectively and diligently. For instance, Patent rights can bring a substantial income through the manufacture or licensing of the invention covered in the Patent. Patent also represents a long-term security. Patent provides a right to the Patentee to prevent a third party from commercially using the patented invention without the permission of the Patentee.

Role of Patents.- Patent gives the Patentee the right to take legal action to prevent others from commercially exploiting the patented invention in the country which grants the Patent without the permission of the Patentee (Proprietor). The grant of a Patent for an invention however does not guarantee the merit of the invention disclosed therein. The country that grants the Patent does not guarantee the legitimacy of the Patent. The Government does not give any financial or any other award/assistance to the Inventor(s)/Patentee(s) along with the grant of the Patent. It is left to the Patentee to commercially exploit the Patent and make profit from it.

Objective of securing a Patent.- It is commonly believed that securing a Patent automatically brings in Wealth and Prosperity. This is not correct. Securing a Patent is only one aspect of the process that may lead to success if one is able to commercially use the invention. Though each invention is different but the objectives of securing a Patent protection for the inventions are basically the same, they are:

─ To make money.- One has to evaluate the invention and its potential to be converted into wealth.
─ To gain security.- It is required to protect the invention from any unauthorized commercial use.
─ To gain knowledge.- Learning the patenting process is easy and when mastered, it can save one from substantial professional charges. Furthermore, through the knowledge thus gained one can extend the life of the Patent and consequently the earnings from it.
─ To have fun.- Patenting can be an enjoyable exercise because it motivates one to innovate new things and to make them succeed.

3.2.2 Patents Act 1970 and its Amendments

A patent is a type of intellectual property owned by the creator, who is the brains behind the creation. The Indian Patent Laws are defined by the Indian Patents Act of 1970. Patent rights are granted under this law for inventions that cover a new and inventive process, product, or article of manufacture and meet the novelty, inventive steps, and industrial applicability requirements. The main objective of the Indian Patent Act is to encourage innovation, which will eventually lead to technological development in India. The Indian Patent Act of 1970 reflects a balance between promoting innovation and safeguarding public interests. It has been amended over time to adapt to the evolving global landscape while maintaining a focus on fostering innovation and accessibility to essential goods and services.

Objectives of the Indian Patent Act 1970:

- It provides protection for the intangible possessions of intellect. It gives a boost to the scientific research domains, new technology, and industrial progress.
- The monopoly is facilitated to the innovator for the utilization of the product and also for letting others use the invention subject to their permission for the same.
- The innovator who has acquired the patent possesses absolute rights on deciding whether the product can be commercialized or not. They can prevent the exploitation and commercialization of the product that has been patented.
- The patent facilitates the right to construct, sell, offer for sale, and import innovations.
- The major objective of the Indian Patent Act is to prevent the infringement of the product by others. In case any duplicate product is claimed to be original innovation the patent holder can present their rights.

Salient features of the Indian Patent 1970:

- Not only Product but also Process can be patented under act.
- Invention shall be useful, novel and something which is not obvious.
- Shall be capable of getting used in Industry, if not then it may amount to revocation of patent.
- Invention shall be new and shall not form part of Section 3 and 4, which provide for exceptions of ideas which cannot be patented.
- Term of patent – 20 years (can be renewed).
- Patent Examination can be conducted on request.
- Both pre-grant and post-grant opposition is enabled.
- Fast track mechanism shall prevail for disposal of appeals if any disparity exists.
- Values to protect integrity of Indian Constitution's various clause such as Article 51-A of fundamental Duties is also taken into consideration by nurturing and keeping nature and rich heritage of culture in mind. Hence Provision for protection of bio-diversity and traditional knowledge is specified in act.
- Publication of applications after Eighteen months with facility for early publication enable getting patented rights as if it was registered from day if reasonableness of time is observed.

Note: Under the provisions of Section 159 of the Patents Act, 1970 the Central Government is empowered to make rules for implementing the Act and regulating Patent administration. Accordingly, the Patents Rules, 1972 were notified and brought into force w.e.f. 20th April 1972. These Rules were amended from time to time till 20th May 2003 when new Patent Rules, 2003 were brought into force by replacing the 1972 rules. These rules were further amended by the Patents (Amendment) Rules, 2005, Patents (Amendment) Rules, 2006, Patents (Amendment) Rules 2012, Patents (Amendment) Rules 2013, Patents (Amendment) Rules 2014, Patents (Amendment) Rules 2015, Patents (Amendment) Rules 2016, Patents (Amendment) Rules 2017 and Patents (Amendment) Rules 2021 respectively.

3.2.3 Patentability Criteria

A Patent is granted for an invention which may be related to any process or product. An invention is different from a discovery. A discovery is something that already existed but has now been discovered. Not all inventions are Patentable. An invention must fulfil certain requirements in order

to be qualified as Patentable. These requirements are known as 'Conditions of Patentability'. The term 'invention' under the Patents Act, 1970 has been defined as 'a new product or process involving an inventive step and capable of industrial application.'

The conditions of Patentability are:

- Novelty
- Inventive step (non-obviousness) and
- Industrial applicability (utility)

Novelty.- A novel invention is one which has not been disclosed in the prior art where 'prior art' means everything that has been published, presented or otherwise disclosed to the public on the date of Patent (The 'Prior Art' includes documents in foreign languages disclosed in any format in any country of the world). For an invention to be judged as novel, the disclosed information should not be available in the 'Prior Art'. This means that there should not be any prior disclosure of any information contained in the application for Patent (anywhere in the public domain, either written or in any other form, or in any language) before the date on which the application is first filed i.e. the 'priority date'.

Inventive Step (Non-obviousness).- 'Inventive step' is a feature of an invention that involves technical advancement as compared to existing knowledge or having economic significance or both, making the invention non-obvious to a person skilled in that art. Here definition of 'inventive step' has been enlarged to include economic significance of the invention apart from already existing criteria for determining the inventive step.

An invention shall not be considered as involving an inventive step, if, having regard to the state of the art, it is obvious to a person skilled in the art. The term 'obvious' means that something which does not go beyond the normal progress of technology but merely follows plainly or logically from the prior art, *i.e.*, something which does not involve the exercise of any skill or ability beyond that to be expected of the person skilled in the art.

For this purpose a 'person skilled in the art' should be presumed to be an ordinary practitioner aware of what was general common knowledge in the relevant art at the relevant date. In some cases the person skilled in the art may be thought of as a group or team of persons rather than as a single person.

Industrial Applicability. - An invention is capable of industrial application if it satisfies following three conditions, cumulatively:

- can be made;
- can be used in at least one field of activity;
- can be reproduced with the same characteristics as many times as necessary.

3.2.4 Patentable and Non- Patentable Subject Matter

Patentable Subject Matter: Patents may be granted for inventions/technologies in any field, ranging from a paper clip or ballpoint pen to a nanotechnology chip or a Harvard mouse (mouse with cancer genes).

It is a general belief that patents are awarded only to major scientific breakthroughs. But, it is not true. In fact, the majority of patents are granted to inventions displaying an improvement over the existing invention. For example, many patents can be awarded to a single molecule e.g. penicillins (an antibiotic that kills microbes) and its derivatives. The derivatives are made by making subtle changes in the structure of the penicillin resulting in new/improved properties, such as acid stability or temperature

stability or killing a wide range of microbes (germs). The new antibiotic molecules, known as second, third or fourth generation penicillin can also be patented.

In our daily life, we use many patented items, such as toothbrush, toothpaste, shoes, pen, eyeglasses, textiles, mobile phones, wrist watch, bicycle, scooter, car, television, cold drinks, beverages and many more. It is not uncommon that many products contain several inventions (patents) e.g. the laptop computer involves hundreds of inventions working together. Similarly, cars, mobile phones and televisions have many patented components.

Following are the patentable subject matters:

Any article, apparatus or machinery or its component.
Any substance whether living or non-living product, pharmaceutical product.
Any composition of matter, pharmaceutical products.
Any process, manner or art of manufacturing other than essential biological process.

Non- Patentable Subject Matter: In the Patent Act, 1970, there are some exclusions (product and processes) that cannot be patented, such as:

(i) An invention which is frivolous, or which claims anything obviously contrary to well established laws are not inventions. For example, A machine alleged to be giving output without any input.

(ii) An invention, the primary or intended use or commercial exploitation of which would be contrary to public order or morality or which causes serious prejudice to human, animal or plant life or health or to the environment is not an invention. For example, a method of adulteration of food, any device, apparatus or machine or method for committing theft.

(iii) The mere discovery of a scientific principle or the formulation of an abstract theory or discovery of any living thing or non-living substance occurring in nature is not an invention. For example, finding of a new substance or micro-organism occurring freely in nature is a discovery and not an invention.

(iv) The mere discovery of a new form of a known substance which does not result in the enhancement of the known efficacy of that substance or the mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant is not an invention.

(v) A substance obtained by a mere admixture resulting only in the aggregation of the properties of the components thereof or a process for producing such substance is not an invention.

(vi) The mere arrangement or re-arrangement or duplication of known devices each functioning independently of one another in a known way is not an invention.

(vii) A method of agriculture or horticulture is not an invention. For example, a method of producing mushrooms, improved soil etc.

(viii) Any process for the medicinal, surgical, curative, prophylactic, diagnostic, therapeutic or other treatment of human beings or any process for a similar treatment of animals to render them free of disease or to increase their economic value or that of their products is not an invention. For example, a method of cleaning plaque from teeth.

(ix) Plants and animals in whole or any part thereof other than micro-organisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals are not inventions.

(x) A mathematical or business method are not inventions and hence not patentable.

(xi) A literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever including cinematographic works and television productions is not an invention.

(xii) A mere scheme or rule or method of performing mental act or method of playing game is not an invention. For example, a method of teaching, a method of learning etc.

(xiii) Topography of integrated circuits is not an invention.

(xiv) An invention which in effect, is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components is not an invention. For example, the antiseptic properties of turmeric for wound healing.

3.2.5 Process of Patenting

The patent granting procedure in India typically involves several steps.

Step 1: Filing of Patent Application: The process begins with the filing of a patent application at the Indian Patent Office (IPO). The application must contain a detailed description of the invention, along with any necessary drawings, claims, and other relevant information.

Step 2: Formal Examination: Once the application is filed, it undergoes a formal examination by the patent office. During this stage, the patent office examines the application to ensure that all formal requirements have been met. This includes checking for compliance with formatting rules and payment of the necessary fees.

Step 3: Publication: After the formal examination, the application is typically published in the Official Journal of the Indian Patent Office. This publication serves to notify the public about the existence of the patent application

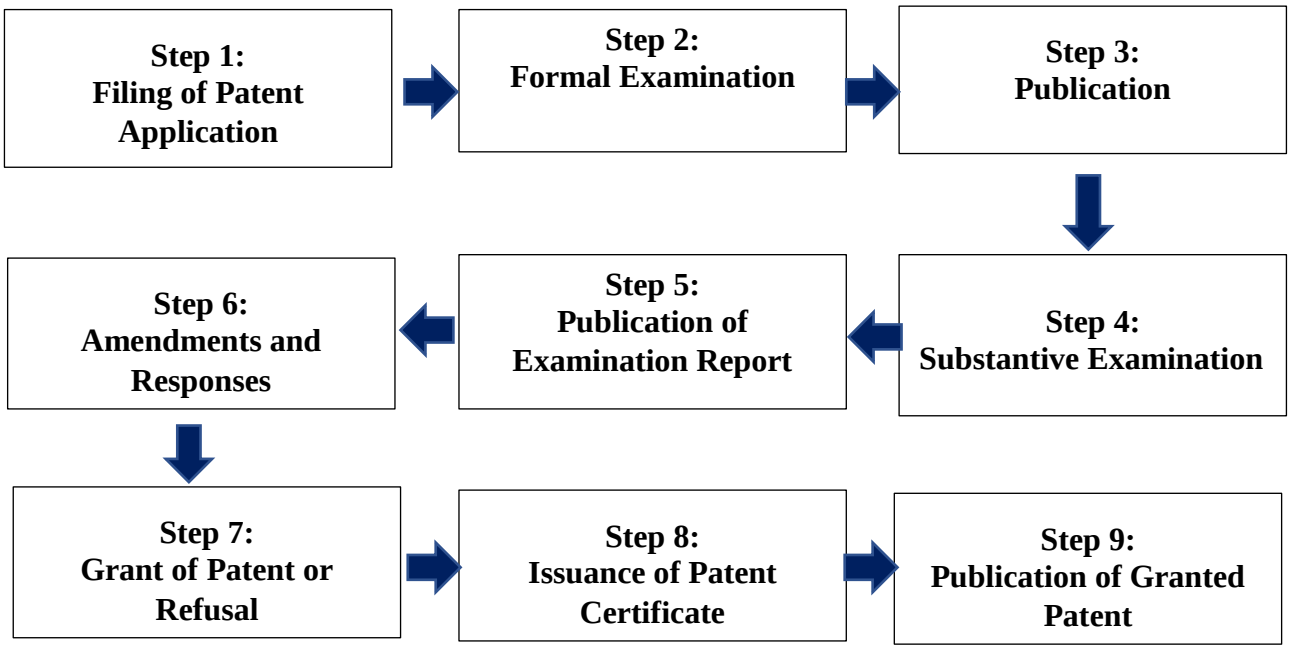

Figure. Flow chart presenting the patent granting procedure in India.

.**Step 4: Substantive Examination:** Following publication, the application undergoes substantive examination to assess the novelty and inventive step of the invention claimed in the application. The applicant may be required to respond to any objections raised by the patent office during this examination.

Step 5: Publication of Examination Report: Once the substantive examination is complete, the patent office issues an examination report detailing any objections or deficiencies found in the application. This report is published in the Official Journal, and the applicant is given an opportunity to respond to the objections raised.

Step 6: Amendments and Responses: The applicant has the opportunity to address any objections raised by the patent office by making amendments to the application or providing arguments and evidence in support of the patentability of the invention.

Step 7: Grant of Patent or Refusal: If the patent office is satisfied with the responses provided by the applicant and finds that the invention meets the criteria for patentability, a patent is granted. However, if the patent office determines that the invention does not meet the requirements for patentability, the application may be refused.

Step 8: Issuance of Patent Certificate: If the patent application is successful, the patent office issues a patent certificate to the applicant. This certificate serves as official recognition of the patent rights granted to the inventor.

Step 9: Publication of Granted Patent: The details of the granted patent are published in the Official Journal, providing public notice of the patent rights.

It is important to note that the patent granting procedure in India can be complex and may involve multiple rounds of examination and correspondence between the applicant and the patent office. Additionally, the timeline for obtaining a patent can vary depending on factors such as the backlog of applications at the patent office and the complexity of the invention.

3.2.6 Types of Patent Applications

(i) Provisional Application - A patent application filed when the invention is not fully finalized, and some part of the invention is still under experimentation. Such type of application helps to obtain the priority date for the invention.

(ii). Ordinary Application - A patent application filed with complete specifications and claims but without claiming any priority date.

(iii). PCT Application - An international application filed in accordance with PCT. A single application can be filed to seek patent protection and claim priority in all the member countries of PCT.

(iv). Divisional Application - When an application claims more than one invention, the applicant on his own or to meet the official objection on the ground of plurality may divide the application and file two or more applications. This application divided out of the parent one is known as a Divisional Application. The priority date for all the divisional applications will be the same as that of the main (the Parent) Application (Ante-dating).

(v). Patent of Addition Application - When an invention is a slight modification of the earlier invention for which the patentee has already applied for or has obtained a patent, the applicant can go for 'Patent of Addition ', if the modification in the invention is new. Benefit - There is no need to pay a separate renewal fee for the Patent of 'Addition ', during the term of the main patent. It expires along with the main patent.

(vi). **Convention Application** - If a patent application has been filed in the Indian Patent Office, and the applicant wishes to file the same invention in the one or more Convention countries (e.g. Paris Convention) by claiming the same priority date on which application was filed in India, such an

application is known as Convention Application. The applicant must file Convention Application within 12 months from the date of filing in India to claim the same priority date.

3.2.7 Patent Search and Databases

An important step before filing a patent application is to conduct a patent search. Just as companies need to do due diligence before taking on any business venture, likewise patent owners need to do patent due diligence before filing a patent application. A patent search is a search conducted in patent databases as well as in the literature available, to check whether any invention similar to the invention in respect of which patent is to be obtained, already exists. In other words, it evaluates inventor's chances of getting a patent grant. Therefore, instead of going forth with the filing, if one conducts the patentability search, one can get a clear idea about the patentability of the invention; whether the application should be filed and the strengths and weakness of his invention.

Since patenting is an expensive procedure, it is prudent to conduct a patentability search before filing an application. Although there is an additional expense associated to have a patent search performed, it can potentially save the inventor's money down the road.

Patent information is made available to the public through a variety of databases. Each database covers a particular set of patent documents. At present no database has complete coverage of all patent documents ever published worldwide. Thus, it may be necessary to consult multiple databases in order to find and then access patent documents relevant to your interests.

Below listed are a few patent databases that might help in pursuit of patent data search and analysis.

Free patent databases	Paid patent databases
• Indian Patent Advanced Search System (*InPASS*- http://ipindiaservices.gov.in/publicsearch/). • Google Patents • Espacenet • USPTO Web Patent Database • PQAI • Patentscope by WIPO • WIPO's INSPIRE • Lens.org	• Derwent • PatBase • Patseer • Ambercite • Drug Patent Watch • Patsnap • Patent Inspiration • InQuartik's Patent Search

3.2.8 Rights of Patentee

The rights granted by a patent include the following:

- A patent grants the owner exclusive rights to make, use, sell, or import the patented invention for a limited period.
- The patent holder has the right to prevent others from using the patented invention without their permission.
- A patent provides legal protection against unauthorized use of the invention by others.
- The patent owner has a monopoly over the invention. It allows them to exploit and commercialize it without competition.
- The patent holder can license their invention to others. It grants them the right to use the invention in exchange for licensing fees.

- A patent gives the owner the ability to take legal action against anyone who infringes upon their patent rights.

3.2.9 Patent Infringement

Patent infringement occurs when another party makes, uses, or sells a patented item without the permission of the patent holder. The patent holder may choose to sue the infringing party to stop his or her activities, as well as to receive compensation for the unauthorized use. Since intellectual property is governed by statutory law, the patent holder must sue the unauthorized party in court of law.

The following acts when committed without the consent of the patentee shall amount to infringement:

(i) Making, using, offering for sale, selling, importing the patented product;

(ii) Using the patented process, or using, offering for sale, selling or importing the product directly obtained by that process.

Infringements can be classified into two categories:

Direct Infringement - when a product is substantially close to any patented product or in case where the marketing or commercial use of the invention is carried out without the permission of the owner of the invention.

Indirect Infringement - When some amount of deceit or accidental infringement happens without any intention of infringement. If such an unlawful act has been committed, the patentee holds the right to sue the infringer through judicial intervention. Every country has certain laws to deal with such unlawful acts. Following reliefs are made available to the patentee:

- Interlocutory/interim injunction.
- Damages or accounts of profits.
- Permanent injunction.

It is pertinent to mention that the Central government always holds the rights (Section 100 of the Patent Act, 1970, Rule 32 of the Patent Rules, 2003) to use the invention in the case of national emergency or other circumstances of extreme urgency after notifying the owner.

3.2.10 Recent Developments

With the rapid advancement in science and technology, newer forms of intellectual property protection are emerging. Examples of such protection are seen in the efforts made to protect computer programmes and softwares, life forms particularly following developments in the biotechnology etc.

Patent laws of several countries favor patent protection for software innovation. Such countries include USA, Australia and Singapore, to name a few. However, many other countries which include India and European nations, have more stringent laws concerning patent protection to software innovation. The Indian Patent Law does not contain any specific provision regarding the protection of computer software.

Biotechnology has been at the core of a number of important developments in the pharmaceutical, agrochemical, energy and environmental sectors. In particular, progress in the field of molecular biology, biotechnology and molecular medicine has highlighted the potential of biotechnology for the pharmaceutical industry.

a. Patenting of Softwares

Modern society relies heavily on computer technology. Without software, a computer cannot operate. Software and hardware work in tandem in today's information society. So, it is no wonder that intellectual property protection of software is crucial not only for the software industry, but for other businesses as well.

A software patent is generally defined as a patent that protects some programming technique. The Foundation for a Free Information Infrastructure (FFII) has defined a software patent as being a "patent on any performance of a computer realized by means of a computer program". The intellectual protection of computer software has been highly debated at the national and international level.

There is intense debate over the extent to which software patents should be granted, if at all. Important issues concerning software patents include:

• Whether software patents should be allowed, and if so, where the boundary between patentable and non-patentable software should lie;
• Whether the inventive step and non-obviousness requirement is applied too loosely to software; and
• Whether patents covering software discourage, rather than encourage, innovation.

The Indian Patent Law does not contain any specific provision regarding the protection of computer software. Computer software on the other hand is protected by copyright as applicable to literary and aesthetic works. A computer program is therefore dealt with a literary work and the law and practice in relation to literary works will apply to computer programs.

The Indian Patent Act, as of now, excludes only 'computer programs per se' from patentability. The issue of whether computer programs tied to certain hardware can be patented is a controversial one. In India the gaining of patent protection for software depends more on the drafting skills of the Patent Engineer. If the claims are drafted in such a way as to reflect that the invention is not software per se, it shall qualify for patent protection.

b. Inventions in Biotechnology

The exciting developments in the domain of biotechnology have resulted in intensive R&D activities all over the world including India. After information technology, biotechnology is increasingly recognized as the next wave in the knowledge-based economy. Biotechnology has been at the core of a number of important developments in the pharmaceutical, agrochemical, energy and environmental sectors. In particular, progress in the field of molecular biology, biotechnology and molecular medicine has highlighted the potential of biotechnology for the pharmaceutical industry.

The most vital distinction between the legal practices of India and developed countries is that India does not allow patenting of micro-organisms which already exist in nature, as the same is considered to be a discovery as per the provisions of the Section 3(d) of the Patents Act, 1970 and therefore not patentable. But genetically modified versions of the same microorganisms that result in enhancement of its known efficacies are patentable.

India enacted the Biological Diversity Act in 2002 for preservation of biological diversity in India and the Act provides mechanism for equitable sharing of benefits arising out of the use of traditional biological resources and knowledge.

3.2.11 Case Examples: Popular Patent Cases in India

1. Turmeric Patent Case (1995–1997):

- **Issue**: US granted a patent to University of Mississippi for turmeric's wound-healing property.
- **Action**: CSIR, India, challenged it, proving turmeric's use was centuries-old traditional knowledge.
- **Outcome**: Patent revoked in 1997.
- **Significance**: Landmark in safeguarding India's traditional medicinal knowledge.

2. **Neem Patent Case (1995–2000):**

- **Issue**: European Patent Office (EPO) granted a patent on neem-based fungicide to W.R. Grace & USDA.
- **Action**: Indian scientists and NGOs opposed it, citing prior traditional use.
- **Outcome**: Patent revoked in 2000.
- **Significance**: Protected bio-resources and traditional ecological knowledge.

3. **Basmati Rice Patent Case (2001):**

- **Issue**: US firm RiceTec tried to patent certain basmati rice lines and grains.
- **Action**: India contested, proving basmati was indigenous to India/Pakistan.
- **Outcome**: Many claims dropped; RiceTec restricted from using the name "Basmati."
- **Significance**: Protected India's **Geographical Indications (GI)** rights.

4. **Novartis v. Union of India (2013):**

- **Issue**: Novartis applied for a patent on cancer drug *Glivec* (beta crystalline form of imatinib mesylate).
- **Action**: Patent Office and courts rejected it, saying it was only a modification of an existing drug.
- **Outcome**: Supreme Court upheld rejection in 2013.
- **Significance**: Prevented "evergreening" of patents, ensured affordable access to life-saving medicines.

5. **Dimminaco Case (2002):**

- **Issue**: Application for a patent on a process involving **live vaccine for poultry disease**.
- **Action**: Initially rejected, arguing processes with living organisms cannot be patented.
- **Outcome**: Calcutta High Court ruled such processes are patentable.
- **Significance**: Opened scope for patents in **biotechnology** in India.

6. **Monsanto BT Cotton Case (2019):**

- **Issue**: Monsanto patented genetically modified BT cotton seeds in India.
- **Action**: Indian seed companies resisted royalty payments; case reached Supreme Court.
- **Outcome**: Court held that **plant varieties and seeds cannot be patented** under Indian law.
- **Significance**: Strengthened farmers' rights and clarified scope of biotech patents.

7. Bajaj Auto vs. TVS Motors (2007–2010):

- **Issue**: Bajaj accused TVS of infringing its **DTSi (Digital Twin Spark Ignition)** engine technology patent.

- **Action**: Bajaj filed infringement case; TVS countered with a revocation petition.
- **Outcome**: Settled after prolonged litigation.
- **Significance**: One of India's first high-profile **automobile patent disputes**.

8. **Ericsson vs. Micromax (2013):**

- **Issue**: Ericsson sued Micromax for using its **Standard Essential Patents (SEPs)** related to GSM, 3G, and EDGE technologies without proper licensing.
- **Action**: Dispute over high royalty fees demanded by Ericsson.
- **Outcome**: Led to interim arrangements and licensing negotiations.
- **Significance**: Landmark case on **FRAND (Fair, Reasonable, and Non-Discriminatory)** licensing in telecom sector.

These 8 cases collectively show how patents in India intersect with **traditional knowledge (Turmeric, Neem, Basmati), public health (Novartis), biotech (Dimminaco, Monsanto), and industry/tech (Bajaj vs TVS, Ericsson vs Micromax)** — shaping India's **IPR policy, innovation ecosystem, and social justice concerns**.

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Short Answer Type Questions

1. Define 'Intellectual Property'.
2. What are the needs for Intellectual Property Right?
3. List the types of IPR in India.
4. Name any 4 leading International Instruments concerning Intellectual Property Rights.
5. Name any 4 important objectives of the IPR policy in India.
6. What are the objectives of securing a Patent protection for the inventions.
7. What are the conditions of patentability?
8. List the patentable subject matters.
9. Name any 4 types of Patent Applications.
10. List the acts that leads to Patent Infringement?

Descriptive type Questions

1. Explain briefly, role of Intellectual Property (IP) in Economic and Cultural Development of Society.
2. Briefly discuss the five important types of Intellectual Property in India.
3. Discuss Intellectual Property (IP) as a Global Indicator of Innovation
4. Discuss the objectives and salient features of National IPR Policy 2016 in India.
5. Enumerate the objectives and salient features of Indian Patent Act 1970.
6. Discuss the Patentability Criteria in India.
7. Briefly explain the different types of patent applications.
8. Write e a note on patent infringements.
9. Write a note on patentable and non-patentable subject matter.
10. With the help of flow chart, explain the steps involved in Process of Patenting in India.

Discussion type Questions

1. Choose a recent technological innovation or cultural product (e.g., a mobile app, a film, a biotech discovery). Identify the most appropriate type of Intellectual Property protection for it and justify your choice.
2. Apply the principles of the National IPR Policy (2016) to suggest how a start-up in India could safeguard its innovations while expanding globally.
3. Imagine you are part of a policy think-tank. Design a framework for strengthening IP governance in India that aligns with global innovation indicators while supporting local entrepreneurs and cultural industries.
4. Critically evaluate the role of Intellectual Property Rights (IPR) in balancing economic growth with cultural preservation in society. Do you think the current framework leans more toward one side.
5. Apply the conditions for patentability to a software-based invention. Would it qualify for a patent in India? Discuss with reasoning.
6. Analyze the differences between patentable and non-patentable matters in India. How do these distinctions influence innovation in pharmaceuticals versus information technology?
7. Evaluate the impact of patent infringement cases on fostering or hindering innovation. Do you think strict enforcement always benefits society?.
8. Imagine you are advising a start-up developing a breakthrough AI-based medical diagnostic tool. Design a patenting strategy for them in India and globally.

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