

III B. Tech I Semester Regular/Supplementary Examinations, October/November-2016
INTELLECTUAL PROPERTY RIGHTS AND PATENTS
 (CIVIL,MECH, EEE,ECE,EIE,ECC,AME,MM,AGE &AE)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answering the question in **Part-A** is compulsory
 3. Answer any **THREE** Questions from **Part-B**
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PART -A

- 1 a) Internet poses new challenges to copyright rights protection in the digital era. Explain the statement. [4M]
- b) Service Marks are also protected under the Intellectual Property Law. Identify the law that protects service marks and state the importance of service marks. [4M]
- c) Turmeric is a well known remedy for various injuries and beauty treatments. State the nature of IPR protection given by law. [3M]
- d) Canon Digital Camera has come up with a new model in 2015 October and they want to protect this new invention of their company in India. Which law protects this invention? [4M]
- e) Write about Coca-Cola formula and its IPR protection. [3M]
- f) Write about World Intellectual Protection Organization and its functions. [4M]

PART -B

- 2 a) What do you mean by Intellectual Property Rights? [4M]
- b) State the value of Intellectual Property Rights in the present days. Why and what value does intellectual property create for the companies? [4M]
- c) What are the different kinds of Intellectual Property Rights? Give example for each one of them. [8M]
- 3 a) 'X' company uses a mark which is very similar to the Trade Marks of 'Y' company and starts selling its products successfully. The revenue of the 'Y' company has also decreased. What can 'Y' company do? State the remedy/ies that 'Y' company can get from 'X' company. [8M]
- b) What do you mean by Trade Mark/s? State the IP law relating to Trade Marks and describe its nature. [8M]
- 4 a) What are the requirements to be fulfilled for a Patent grant? State the process from patent search till the grant of patent. [8M]
- b) Distinguish between Patent Protection and Trade Secrets. Give examples and explain each of these Intellectual property rights and its infringements. [8M]
- 5 a) Explain the subject matter of copyrights with the help of examples. Are Collective work and Derivative work also copyrightable? [8M]
- b) Can the owner of the copyright own the copyright even without registration? Can an owner transfer his copyrights to others? Explain with examples. [8M]

- 6 a) Semiconductor Chip Protection law is made with against the chip Piracy. Reverse Engineering is one of the best methods used for infringements. Discuss. [4M]
- b) How is India developing its Intellectual Property Laws to comply with the International Standards? State the International aspects of IPR laws and the agencies responsible for their protection. [8M]
- c) What are the Methods of protecting Trade Secrets. Explain. [4M]
- 7 a) E-commerce transactions are protected under Information Technology Act, 2000 (IT Act). Explain the benefits of e-commerce and e-governance. [8M]
- b) Data security is a challenging task for the individuals, companies and government. The large amount of data collection is a risk to protect privacy and confidentiality. Discuss the penalties, compensations and offences under IT Act 2000. [8M]

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PART -A

- 1 a) Which law protects movies and its related rights? Identify and explain the importance of this Law. [4M]
- b) Fish medicine given by one of the well known Family in India is also protected under the Intellectual Property Rights. Identify the law and explain its nature. [3M]
- c) A chemical is invented by a group of researchers. This is a new chemical that can be used for manufacturing fertilizer. What kind of an intellectual property can protect this invention? [4M]
- d) Which law protects the logo/s of companies? Identity the law with examples. [4M]
- e) Write a short note on Trade- Related Aspects of Intellectual Property Rights (TRIPS). [4M]
- f) Write about Virus Attack on Computers. [3M]

PART -B

- 2 a) State the meaning of originality and fixation in copyright law with all the categories of works that are protected. Explain with examples as to why an Idea cannot be copyrighted? [6M]
- b) When do copyrighted work come to the public domain and allowed to be used by public? [4M]
- c) What are the rights and remedies available to the copyright holder/owner? Write the meaning of Fair Dealing. [6M]
- 3 a) State the essentials to be fulfilled to get a patent for a product. [4M]
- b) Give an overview of Patent Act, 1970 and state as to how it protects the Patentee. [8M]
- c) In some countries Software Programs are Copyrighted and in few it is Patented. Describe. [4M]
- 4 a) Trade Marks not only protects the company of its trade marks but also protects the interest of the consumers. Comment and explain the purpose of Trademark law. [6M]
- b) Trade Marks are registered and infringement of registered trademark is a civil wrong as well as an offence. Discuss as to how they can be infringed with special reference to passing- off as a remedy. [6M]
- c) Collective Trade Mark, Well Known Trademarks and Certification Mark are protected under the Trade Marks law. Elucidate with illustrations. [4M]

- 5 a) New types of crimes are taking place in cyberspace. The use of internet leads to increase in cybercrimes. Which law in India makes various crimes as cyber crimes? [4M]
- b) State the e-governance initiatives taken up by India with special reference to State of Andhra Pradesh with the help of examples. [6M]
- c) Online buying and selling of goods and services help economic development. Give examples of online commerce and state its advantages and disadvantages. Explain as to how the Information Technology Act, 2000 facilitates e-commerce. [6M]
- 6 a) Which are the International Agencies that are facilitating the development of Intellectual Property laws? [8M]
- b) Every Intellectual Property rights aim at protecting different rights of the owner/proprietor of the right. State all the types of IPR's with examples and their related laws in India. [8M]
- 7 a) What are Trade Secrets? Give Examples. [4M]
- b) What are the methods to protect the trade secrets? [6M]
- c) Distinguish between Trade Secrets and Patent Protection. [6M]

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PART -A

- 1 a) A group of people are using a plant extract to produce a homemade preparation that gives immunity to human body and also enhancing energy. However, these raw materials and the temperature for the growing of these trees are available only in the region of Andhra Pradesh (Tribal Area) and well known throughout the world. Which IPR can protect the groups of people for making it and prevent other people from making the same? [3M]
- b) State the objectives of enacting Information Technology Law in India. [4M]
- c) Motor Car Design that has aesthetic looks or appearance is protected under which of the Intellectual Property Rights. Explain. [4M]
- d) Your friend wrote a book on C++. What Intellectual property would protect his authorship? Can you also write a book on same subject i.e. C++ and get protection under this law? Discuss the protection given under law to the authors of books. [4M]
- e) Domain name is also Trade Mark. Is the statement true? [4M]
- f) Industrial Designs is one of the classifications of Intellectual Property law. Explain. [3M]

PART -B

- 2 a) What do you understand by Patent? State the features to be proved to get a patent grant. State the specifications that are to be submitted to the Patent office. [8M]
- b) The state/government can grant compulsory licenses for patents in order to protect the interest of the society. Is it true? Explain [8M]
- 3 a) Artistic Work, Music and Literary works are protected under copyright law. Explain with examples. [4M]
- b) Explain the meaning of copyright. Are performers' rights also protected? [4M]
- c) State the various rights, infringements and remedies as per the Copyright Law? [8M]
- 4 a) Information Technology Law was made to facilitate E-commerce and E-governance in India. Discuss as to how the law helps in making e-contracts/online contracts as valid. [6M]
- b) Electronic signature helps in doing globalised trade. How does the Information Technology Act, 2000 facilitate registration of Electronic Signature. [4M]
- c) There are various wrongs that are committed through use of internet and computer. These are civil wrongs and offences (popularly known as cybercrimes). Explain with examples. [6M]

- 5 a) What are Trade Marks and Service Marks? Write a short note on importance of Trade Marks Law and its benefits to conduct business. [8M]
b) What do you mean by likelihood of confusion? State the rights and remedies available to the Trade Marks proprietor and the assignee. [8M]
- 6 a) Misuse/violations of Intellectual Property Rights are increasing. Comment on various IPR's and their violations with special reference to violations in the digital era. [8M]
b) Intellectual Property is valued more than the buildings and other properties of the companies. State the importance of IPR's in the globalised world. State the influence of International law changes on National law. [8M]
- 7 a) Explain as to why some companies prefer to maintain Trade Secrets than register a Patent. State the meaning and importance of these two IPR's. [8M]
b) Non-disclosure agreements and intention to maintain confidentiality is an important element to protect Trade Secrets. Comment on the statement. [8M]

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PART -A

- | | | |
|------|---|------|
| 1 a) | Define Related or Neighbouring Rights. | [3M] |
| b) | How is Product Patent different from Process Patent? | [4M] |
| c) | What is a Literary Work? | [3M] |
| d) | Define Trade Secrets | [4M] |
| e) | What is a Cyber Crime? | [4M] |
| f) | Explain "Likelihood of Confusion" in the context of Trademarks. | [4M] |

PART -B

- | | | |
|------|---|------|
| 2 a) | Trade secrets protection is very difficult. Comment with special reference to Non-disclosures agreements between employer and employee. | [6M] |
| b) | Neem and Basmati Rice story of India is an example of Geographical Indication. State the examples and give an overview of this IP Right and its protection in India. | [4M] |
| c) | Reverse Engineering and Chip Piracy. Which Law provides protection against Chip Piracy? | [6M] |
| 3 a) | In India both product and process patent are protected. Analyse. | [4M] |
| b) | What is the meaning of patent search and patent infringement? State the process of filling an application for registration of patent, raise objections and grant of patent. | [8M] |
| c) | Compulsory Licenses can be issued for the benefit of the people. When is a Compulsory License issued and revoked? | [4M] |
| 4 a) | International Treaties and Conventions are the guiding principles to make Intellectual Property Laws for all the countries. India is a member of various conventions and it is constantly changing its laws as per the global requirements. Explain with the help of conventions and treaties related to IPR's. | [8M] |
| b) | What do you understand by Intellectual Property Right? There are varied types of Intellectual Property Rights. Some are protected through laws and others are by practice. Explain with examples. | [8M] |

- 5 a) E-contracts are also good (valid) contract as per the Information Technology Act, 2000. E-contracts help the growth of e-commerce and e-governance. Discuss with examples. [8M]
- b) Cyber Crimes are hindrance to the growth of online/electronic transactions. What are the different types of cyber crimes? [8M]
- 6 a) State the works in which copyright subsists. When copyrights are said to be infringed? Certain acts are still not considered to be copyright infringement. Identify them with special reference to Fair Dealing. [8M]
- b) Explain the Broadcasting and Performers' Rights. What are civil remedies available under the Copyright Law in India? [8M]
- 7 a) How are the Intellectual Property rights transferred by owner/proprietor? [4M]
- b) Which agencies are working for development of law relating to Intellectual Property rights? Discuss. [6M]
- c) Intellectual Property Rights are the legal rights governing the use of creations of human minds. Explain the nature of each of IPRs. [6M]

Code No: R31021

R10

Set No. 1

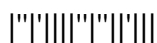
III B.Tech I Semester Supplementary Examinations, October/November - 2016
COMPLEX VARIABLES AND STATISTICAL METHODS
(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks

- 1 a) Prove that an analytic function with constant modulus is constant? [7M]
b) Find the principle value of $\text{Log } z$ when $z = (1-i)^{1+i}$. [8M]
- 2 a) Verify Cauchy's theorem for the function $f(z) = 3z^2 + iz - 4$, if C is the square with vertices at $1 \pm i, -1 \pm i$? [7M]
b) Evaluate $\int (2y + x^2)dx + (3x - y)dy$ along the parabola $x = 2t, y = t^2 + 3$ joining (0,3) and (2,4). [8M]
- 3 a) Find the poles and the corresponding residues $\frac{1}{(z^2 - 1)^3}$. [7M]
b) Evaluate $\int_0^\infty \frac{\sin mx}{x} dx$ using residue theorem. [8M]
- 4 a) Show that the transformation $w = z + \frac{1}{z}$ converts the straight line $\arg z = a$ ($|a| < \frac{\pi}{2}$) into a branch of the hyperbola of eccentricity $\sec a$ [7M]
b) Find the bilinear transformation which maps the points $(0, 1, \infty)$ into the points $(-1, -2, -i)$. [8M]
- 5 a) The mean of Binomial distribution is 3 and the variance is 9/4. Find (i) the value of n (ii) $P(X \geq 7)$ (iii) $P(1 \leq X < 6)$. [7M]
b) Suppose 5 men out of 100 and 25 women out of 10000 are colour blind. A colour blind person is chosen at random. What is the probability of the person being a male (assume male and female to be in equal numbers). [8M]
- 6 a) Find the probabilities that a random variable having the standard normal distribution will take on a value (i) between 0.37 and 1.3 (ii) between -0.14 and 0.42 [7M]
b) Construct a 99% confidence interval for the true mean weight loss if 18 persons on diet control after one month had a mean weight loss of 3.42kgs with s.d of 0.68kgs [8M]
- 7 a) A machine produced 30 defective articles from a batch of 3000 articles. Experience shows that the average diameter of the articles is equal to 0.354 with a s.d is 0.048. find 95% confidence interval for the average of this batch of 3000 articles [7M]
b) What is meant by level of significance and explain Type -I error [8M]

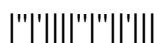


- 8 a) What assumptions need to be made while using the technique of analysis of variance [7M]
- b) The time taken by workers in performing a job by method –I and method – II is given [8M]
below:

Method-I	30	26	36	37	33	32	34
Method-II	37	43	42	45	42	44	48

Does the data show that the variances of time distribution form population from which these samples are drawn do not differ significantly?

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Code No: R31031

R10

Set No. 1

III B.Tech I Semester Supplementary Examinations, October/November - 2016

FINITE ELEMENT METHODS

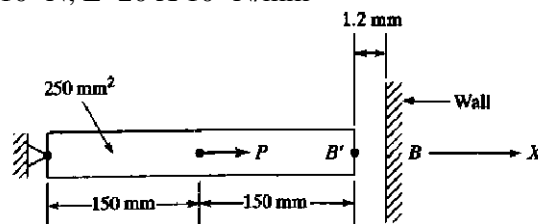
(Common to Mechanical Engineering and Automobile Engineering)

Time: 3 hours

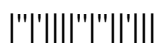
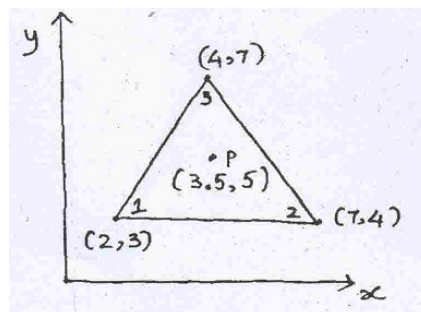
Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks

- Explain strong form and weak form. Discuss their relevance in FEM. [7M]
 - Determine the displacements stress and support reactions in the structure shown in the figure. Take $P = 62 \times 10^3 \text{ N}$, $E = 20 \times 10^3 \text{ N/mm}^2$ [8M]



- Explain the requirements for the selection of interpolation function [7M]
 - Using a simple example explain the procedure to solve a problem in finite element method using Galerkin weighted residual method. [8M]
- Derive the stiffness matrix for a plane truss element. [15M]
- Derive the shape functions for a beam element. [7M]
 - Differentiate between a boundary value problem and an initial value problem. [8M]
- For an axisymmetric structure subjected to axisymmetric loading, derive the expression for stiffness considering triangular element. [7M]
 - Derive the shape functions for a quadratic plane element [8M]
- For an axisymmetric problem, derive D-matrix (matrix which transforms strain into stress). [7M]
 - Determine the shape functions N_1 , N_2 and N_3 at the interior point P for the triangular element shown in the figure [8M]



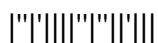
Code No: **R31031**

R10

Set No. 1

- 7 A furnace wall is made up of three layers, inside layer with thermal conductivity 8.5 W/mK, the middle layer with conductivity 0.25 W/mK, the outer layer with conductivity 0.08 W/mK. The respective thicknesses of the inner, middle and outer layer are 25cm, 5cm and 3cm respectively. The inside temperature of the wall is 600°C and outside of the wall is exposed to atmospheric air at 30°C with heat transfer coefficient of 45 W/m²K. Determine the nodal temperatures. [15M]
- 8 Explain the following [15M]
a) Consistent vs. lumped mass matrices
b) Free vibration analysis using FEM.

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Code No: R31041

R10

Set No. 1

III B.Tech I Semester Supplementary Examinations, October/November - 2016

COMPUTER ARCHITECTURE & ORGANIZATION

(Com. to ECE, EIE)

Time: 3 hours

Max. Marks: 75

**Answer any FIVE Questions
All Questions carry equal marks**

- 1 a) What is a bus? Draw the figure to show how functional units are interconnected using a bus and explain. [8M]
b) Discuss in detail about interconnection structures. [7M]
- 2 a) Explain various instruction formats with an example. [8M]
b) Write short note on register organization. [7M]
- 3 a) Explain briefly about micro instruction sequencing. [8M]
b) Discuss the generation of control signals using micro program. [7M]
- 4 a) Draw the flowchart for floating point division and explain. [8M]
b) Explain briefly about BCD arithmetic unit. [7M]
- 5 a) Explain direct mapped cache organization in detail. [7M]
b) Explain the three types of mapping procedures related to cache memory organization at length. [8M]
- 6 a) Write notes on the following: [8M]
i. Programmed I/O ii. Interrupt driven I/O
b) What is an interrupt? What are the different types of interrupts known to you, describe briefly? [7M]
- 7 a) Explain in detail about MESI protocol. [8M]
b) Write a short note on symmetric multi processors. [7M]
- 8 a) Explain parallel arbitration logic with a neat diagram. [8M]
b) Give short note on inter processor synchronization. [7M]

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