

FACULTY OF INFORMATICS
B.E. 4/4 (IT) I – Semester (Old) Examination, July 2014

Subject: Intellectual Property Rights
(Elective – II)

Time: 3 Hours

Max.Marks: 75

Note: Answer all questions from Part - A. Answer any five questions from Part - B.

PART – A (25 Marks)

- | | | |
|----|---|---|
| 1 | What is meant by proprietary and personal rights? | 3 |
| 2 | Write short notes on geographical indications of goods. | 3 |
| 3 | What is meant by infringement of copyright? | 2 |
| 4 | Define neighbouring rights. | 2 |
| 5 | Write about qualifications of a patent agent. | 3 |
| 6 | List out the purpose and functions of trademark. | 3 |
| 7 | Define temporary injunction. | 2 |
| 8 | Write short notes on industrial designs. | 3 |
| 9 | Write few rights and duties of proprietor of design. | 2 |
| 10 | What are computer databases? What kind of protection is accorded to them? | 2 |

PART – B (50 Marks)

- 11 Explain the new forms of intellectual property.
- 12 What is 'Passing off' in relation to a trademark? Explain with suitable illustrations.
- 13 Define design and explain its essential features.
- 14 Copyrights protect expressions and not ideas – Elaborate.
- 15 A patent is a techno legal document – Explain.
- 16 Discuss the impact of TRIP'S agreement on the Indian regime of IPRS.
- 17 Who is the owner of copyright? How can the ownership of copyright be transferred?

- 9 State true / false
- i) Universal Copyright Convention has replaced the Berne Convention ()
 - ii) Preventing others from making copies of his / her work is an exclusive right under Copyright. ()
 - iii) Broadcasting Organizations can also become members of the Collective Management Organization. ()
 - iv) India has ratified the internet treaties. ()
 - v) Nullity of assignment automatically leads to the nullity of the trademark rights of the assigner. ()
- 10 Problems:
- i) Is it possible to use the Copyrighted musical work from a film without the permission of the copyright owner?
 - ii) Kerala Govt applies for registration of jute products as a geographical indication. Can it do so?
 - iii) Raju is the music composer of a cinematograph film, can his rights be defeated by the producer of the film.
 - iv) C wants to register a particular sound as trademark in India. Can he succeed.
 - v) A and B are joint owners of a copyright for a book. Can A exploit it individually?

PART – B (5x10 = 50 Marks)

- 11 Discuss the evolution of intellectual property and protection of IPR in detail.
- 12 Explain the role of patent offices in India and jurisdiction.
- 13 What is an industrial design? Outline the forms of industrial properties related to plant and industrial designs.
- 14 Describe the concepts of trademark and rights arising from trademark registration.
- 15 Describe the procedure for filing of patents.
- 16 Name four different organs of the WIPO. Describe their functions.
- 17 Digital economy has posed several challenges for intellectual property rights – Explain.

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B.E. 4/4 (IT) I – Semester (New) (Suppl.) Examination, July 2014

**Subject: Wireless and Mobile Communications
(Elective – II)****Time: 3 Hours****Max.Marks: 75****Note: Answer all questions from Part A. Answer any five questions from Part B.****PART – A (25 Marks)**

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|----|---|---|
| 1 | Define far field distance of a transmitting antenna. | 2 |
| 2 | Define path loss – write expression for path loss for ground reflection two ray model expressed in dB. | 3 |
| 3 | How much band width is required for a analog frequency modulated signal that has an audio bandwidth of 5 KHz and modulation index is 3 (three). | 2 |
| 4 | List the factors that influence the choice of digital modulation. | 2 |
| 5 | Discuss about pseudo noise sequences. | 3 |
| 6 | What are the different reasons for handoff? | 2 |
| 7 | Sketch TDMA frame structure. | 2 |
| 8 | Write the need for mobile IP. | 3 |
| 9 | Briefly explain about tunneling and encapsulation. | 3 |
| 10 | Explain the principal of IP in IP encapsulation. | 3 |

PART – B (50 Marks)

- | | | |
|----|---|--------|
| 11 | Explain methods used for improving capacity and coverage of a cellular system in detail. | 10 |
| 12 | a) Explain knife edge diffraction model.
b) Discuss about indoor propagation models. | 5
5 |
| 13 | Draw the block diagram of DS-SS system and FHSS and explain them. | 10 |
| 14 | Explain about TDMA and CDMA in detail. | 10 |
| 15 | Explain DHCP and describe how a DHCP client initialized. | 10 |
| 16 | Discuss about different approaches of mobile TCP. | 10 |
| 17 | Write short notes on any two .
a) GSM
b) Mobile Networks
c) Outdoor propagation models. | 10 |

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B.E. 4/4 (IT) I – Semester (New) (Suppl.) Examination, July 2014

**Subject: Ad-hoc and Sensor Networks
(Elective – II)****Time: 3 Hours****Max.Marks: 75****Note: Answer all questions from Part A. Answer any five questions from Part B.****PART – A (25 Marks)**

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|----|--|---|
| 1 | Differentiate between fast fading and slow fading. | 3 |
| 2 | Give the need for medium access control. | 2 |
| 3 | What are expected and requested zones? | 3 |
| 4 | List various table driven routing protocols. | 2 |
| 5 | Define weight based multicast protocol. | 2 |
| 6 | List the advantages and disadvantages of bandwidth efficient multicast routing protocol. | 3 |
| 7 | What is hybrid co-ordination function? | 2 |
| 8 | List various attack prevention techniques for mobile adhoc networks. | 3 |
| 9 | What is a sensor networks? | 2 |
| 10 | What are the different layers of wireless sensor network architecture? | 3 |

PART – B (50 Marks)

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|----|--|----|
| 11 | Compare the characteristics of various wireless technologies. | 10 |
| 12 | Explain the working of CGSR protocol. Also mention its advantages and disadvantages. | 10 |
| 13 | Explain about multicast adhoc on-demand distance vector routing protocol. | 10 |
| 14 | Explain about ticket based QoS routing protocol. | 10 |
| 15 | Discuss about demand-based and contention-based MAC protocols for sensor networks. | 10 |
| 16 | Discuss the issues in the design and deployment of adhoc networks. | 10 |
| 17 | Write short notes on: | |
| | a) MAC protocols for wireless sensor networks | 5 |
| | b) Adhoc transport protocol. | 5 |

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B.E. 4/4 (IT) I – Semester (New) (Suppl.) Examination, July 2014

Subject: Distributed Systems (Elective – II)**Time: 3 Hours****Max.Marks: 75****Note: Answer all questions from Part A. Answer any five questions from Part B.****PART – A (25 Marks)**

- | | | |
|----|---|---|
| 1 | What are various forms of transparency in distributed systems? | 3 |
| 2 | How are network operating systems different from distributed operating systems? | 2 |
| 3 | Distinguish between transient and persistent communication of messages. | 2 |
| 4 | Give examples to show the quality of service (QoS) requirements in stream-oriented communication. | 3 |
| 5 | Distinguish between iterative server and concurrent server. | 3 |
| 6 | What are the advantages of user-level threads? | 2 |
| 7 | What is the specific advantage of CORBA in distributed systems? | 3 |
| 8 | How are caching and replication addressed in DCOM? | 2 |
| 9 | How do the requirements of multimedia systems differ from those of real-time systems? | 2 |
| 10 | Give an example of real-time scheduling methods that suit the model of regular continuous multimedia streams. | 3 |

PART – B (50 Marks)

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|----|---|----|
| 11 | a) What are the various goals of distributed systems? Explain. | 6 |
| | b) How can edge servers be used to optimize content and application distribution? | 4 |
| 12 | Explain the principle and various steps in remote procedure calls between a client and a server. | 10 |
| 13 | a) Explain the working of a multithreaded server organized in a dispatcher / worker model. | 5 |
| | b) What are the possible different layers when trying to implement a large name space. | 5 |
| 14 | Based on naming, synchronization and replication approaches, distinguish among CORBA, COM, DCOM and GLOBE. | 10 |
| 15 | a) Using examples explain the characteristics of typical multimedia streams. | 4 |
| | b) What are the main quality of service parameters which are negotiated between an application and its underlying system? | 6 |
| 16 | a) Explain the use of message broker in message queuing systems. | 4 |
| | b) What is “Linking” and “mounting” in context of distributed systems. | 6 |
| 17 | Write short notes on: | |
| | a) Use of hierarchical approaches in naming | 5 |
| | b) Fair scheduling in multimedia systems. | 5 |

FACULTY OF INFORMATICS**B.E. 4/4 (IT) I – Semester (Old) Examination, July 2014****Subject: Digital Instrumentation and Control (Elective – II)****Time: 3 Hours****Max.Marks: 75****Note: Answer all questions from Part A. Answer any five questions from Part B.****PART – A (25 Marks)**

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|----|---|---|
| 1 | Distinguish between SCR and TRIAC. | 2 |
| 2 | Define transducers and write types of transducers. | 3 |
| 3 | Explain different process control modes briefly. | 3 |
| 4 | Briefly explain thermistor characteristics. | 2 |
| 5 | Distinguish between photodiode and light emitting diode. | 2 |
| 6 | Explain working principle of Actuators. | 3 |
| 7 | Define final control element. | 2 |
| 8 | What is a controller mode? List the controller modes. | 3 |
| 9 | State the characteristics of digital data. | 2 |
| 10 | Define stability of a control system and also explain how to maintain it. | 3 |

PART – B (50 Marks)

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|----|--|----|
| 11 | a) Draw the block diagram of process control system and explain each elements of process control system. | 5 |
| | b) With a neat diagram explain the operation of A/D conversion. | 5 |
| 12 | Describe the pressure and flow sensors in detail. | 10 |
| 13 | Present the working operation of any two optical sources employed in process instrumentation. | 10 |
| 14 | a) What is a ladder diagram program in PLC's? Explain it by taking a typical program. | 5 |
| | b) Explain the following modes of operations of analog controllers (a) P.I. (b) P.I.D. | 5 |
| 15 | a) Differentiate analog and digital controllers. | 5 |
| | b) Discuss the design considerations in analog controllers. | 5 |
| 16 | Present various aspects of final control and control elements. | 10 |
| 17 | Write short notes on the following: | |
| | a) Actuators | 3 |
| | b) Thermocouples | 4 |
| | c) Photo detectors | 3 |
