

FACULTY OF INFORMATICS

B.E. 4/4 (IT) I – Semester (Old) Examination, November 2013

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)

1. Define process and process control. (3)
2. Differentiate resolution and accuracy of a measuring device. (2)
3. What is the principle of thermister? (2)
4. What is a data acquisition system? (2)
5. Define the energy EM radiation in terms of power. (2)
6. Explain three characteristics of photodetector. (3)
7. What is a discrete state process? What is a discrete state process control system. (3)
8. Describe proportional integral mode. (3)
9. Mention the characteristics of controller software. (2)
10. Define stability of a control system? How to maintain it? (3)

PART – B (50 Marks)

11. a) Draw the block diagram and explain the elements of process control system. (5)
b) Discuss about A/D converters. (5)
12. a) What is final control operation and explain various control elements? (5)
b) Explain solid state temperature sensors briefly. (5)
13. Describe pressure and flow sensors in detail. (10)
14. Describe three types of controller modes in detail. (10)
15. Illustrate the characteristics of analog to digital controllers. Give their design considerations. (10)
16. What is control loop? Discuss about multivariable control system. (10)
17. Write short notes on any two :
 - a) Activators (3)
 - b) Strain gauge (4)
 - c) Ladder diagram (3)

FACULTY OF INFORMATICS

B.E. 4/4 (IT) I – Semester (Old) Examination, November 2013

Subject : Grid Computing (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 load balancing? (3)
2. Discuss about remote execution in condor-G. (2)
3. Define autonomic computing. (2)
4. Draw and explain grid layered architecture (a neat diagram). (3)
5. Explain the need for common distributed logging. (3)
6. Describe handle resolution process. (3)
7. Explain about Replica location service. (3)
8. Describe WS-security handling. (2)
9. Discuss about point to point communication. (2)
10. How does MPI_gather differ from MPI_allgather function? (2)

PART – B (50 Marks)

- 11.a) Write short notes on EUROGRID project. (5)
b) How do data grid and computational grid differ? (5)
12. Differentiate between Service oriented architecture and Web service architecture. (10)
13. Discuss briefly about OGSA basic services. (10)
14. Explain about various Data Management Services in GT3. (10)
15. How is platform independence achieved in MPI? (10)
- 16.a) What is a message handler? Explain about any two security handlers. (5)
b) Discuss about operator overloading support in OGSI. (5)
- 17.a) Explain about collective communication in MPI. (5)
b) Write about Resource Grouping concepts in CMM. (5)

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B.E. 4/4 (IT) I – Semester (Old) Examination, November 2013

Subject : Data Warehousing and Data Mining (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. List the Data Mining functionalities. (3)
2. Define correlation analysis measure for two attributes. (2)
3. What is a snow flake schema? Give one example. (3)
4. Define closed frequent itemset and maximal frequent itemset. (2)
5. Write the approaches used for tree pruning. (2)
6. What is linear regression? Write the equations to estimate regression coefficient. (3)
7. What is a discordancy test? (2)
8. Define binary variable and how to compute dissimilarity between binary variables. (3)
9. What is spatial trend analysis? (3)
10. Define TF and IDF. (2)

PART – B (50 Marks)

- 11.a) Discuss the major issues in data mining. (5)
- b) Draw and explain the architecture of a typical data mining system. (5)
- 12.a) Explain concept Hierarchy generation for categorical data. (5)
- b) Draw and explain architecture for on-line analytical mining. (5)
13. Consider the following transaction database. Let min-sup = 50% and min-con f = 75%. (10)

TID	List of items
01	M, D, S, B
02	D, S, W, J
03	M, B, C, P
04	W, P, D, S
05	W, D, P, B
06	M, P, B

- a) Find all frequent item sets using FP-growth algorithm. (5)
- b) List all strong association rules. (5)
- 14.a) Explain rule induction using sequential covering algorithm. (5)
- b) Write about predictor error measures. (5)
- 15.a) Explain in detail BIRCH algorithms. (6)
- b) Explain distance based outlier detection. (4)
- 16.a) Discuss about text retrieval methods. (5)
- b) Explain mining associations from multimedia data. (5)
17. Write short notes on : (3)
- a) Categories of measures used in multidimensional data model. (3)
- b) Bayesian belief networks (4)
- c) Web usage mining (3)

FACULTY OF INFORMATICS

B.E. 4/4 (IT) I – Semester (New) (Main) Examination, November 2013
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.A) Which of the following is not specifically protected by Intellectual Property legislation? ()
 a) Industrial Designs b) Copyright c) Trade secrets d) Patents
- B) For a patent to benefit from legal protection of must have ()
 a) A scientific basis b) Industrial application
 c) Market potential d) All of the above
- C) In an action to protect a trademark, which of the following civil remedies is/are available. ()
 a) A permanent injunction b) Damages
 c) Punitive damages d) All of the above
- 2.A) One of the most powerful weapons against illegal copying of music from Compact Disc is ()
 a) New technology b) The law
 c) The internet d) Public responsibility
- B) Which of these rights isn't generally regarded as part of designs law? ()
 a) Registered designs law b) Copyright
 c) Trade mark law d) None of the above
3. A trademark must be distinctive and must not be _____ .
4. The first known statute to give protection to copyright was _____ .
5. An invention can be protected under patent or _____ .
6. _____ emphasizes conflicting interests in economic exchanges.
7. _____ agreements deals with protection of appellations of origin and their International registration.
8. Match the following :
- | | |
|-----------------------------------|------------------|
| a) A patents lasts for | In the 1967 year |
| b) Trademarks are associated with | Article 55 |
| c) Paris convention | 20 years |
| d) DeMinimis imports | Article 60 |
| e) Duration of suspension | Reputation |
| | WIPO |
| | In the year 1999 |

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9. State true or false :

- i) An annual fee is payable to maintain a domain name on the internet. ()
- ii) Signs consisting exclusively of individual colours can be registerable trademarks. ()
- iii) Copy rights rests in the author of the work. ()
- iv) Moral right is alienable. ()
- v) WCT address the challenges posed by digital technology. ()

10. Problems :

- A) A pharma company wanted to apply for the patent to generate a drug, can it succeed.
- B) A and B are joint owners of a copyright for a book. Can A alone exploit it?
- C) The Govt. of Punjab applies for registration of Basmati rice as a geographical indication, can it do so?
- D) Turmeric is sought to be patented as a fungicide. Is it possible in India.
- E) A software company developed a software for smartphones and registered it. Can Nokia use the software under patent infringement.

PART – B (5 x 10 = 50 Marks)

11. Intellectual property is known as a power tool for economic growth. Explain this statement.

12. Define copyright infringement. State the activities that do not constitute infringement of copyright under the Indian Copyright Act.

13. Explain the meaning of designs and the evolution of design protection.

14. What are the various objectives of TRIPS for the protection of Intellectual Property Rights?

15. What are related rights and why are they called so? Which treaty confers these rights at the international level?

16. Define Trademark. Describe the new features brought in by the trademarks act 1999.

17. Explain electronic commerce – Elucidate.

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B.E. 4/4 (IT) I – Semester (Old) Examination, November 2013

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. Write short notes on WTO. (3)
2. Mention different kinds of IPR. (2)
3. List inventions that are not patentable. (3)
4. Comment on the government use of patent. (3)
5. Define Trademark. (2)
6. What is meant by geographical indication? (2)
7. Write about infringement. (2)
8. What is the purpose for granting a design right? (2)
9. 'A' is a professor of technology. His lecture in the class room is recorded without his permission, and the records are sold in the market. Has he got any rights in such an event? Justify. (3)
10. Ayn Rand's famous novel 'Fountain Head' is made as a movie in India. Does it amount to infringement of copyright. Justify. (3)

PART – B (50 Marks)

11. Explain the evolution of Intellectual Property Rights in India.
12. Define a design. Explain how piracy of Registered designs is countered.
13. Discuss salient features of TRIPS.
14. Write in detail about assignment and transmission of registered and unregistered trade marks.
15. Explain the essential conditions for obtaining a patent.
16. Discuss the various factors involved in determining the infringement of copyright.
17. Write about the following :
 - a) Product patenting of Medicines in India
 - b) GATT

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B.E. 4/4 (IT) I – Semester (New) (Main) Examination, November 2013

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)

1. Give the characteristics of 2G cellular networks. (2)
2. Briefly describe the trends in the evolution of Mobile Radio Communications. (3)
3. Define path loss. (2)
4. Explain the concept of signal penetration. (3)
5. Differentiate analog modulation and digital modulation. (2)
6. Explain fast hop and slow hop concept of FHSS. (3)
7. Give the limitations of GSM. (2)
8. Write about GPRS. (3)
9. Explain snooping TCP. (2)
10. Explain Tunneling. (3)

PART – B (50 Marks)

- 11.a) Explain channel assignment strategies.
b) Explain the concept of trunking and grade of service.
- 12.a) Explain indoor propagation models.
b) Define i) Reflection ii) Diffraction iii) Scattering
13. Explain the different digital modulation techniques in detail.
- 14.a) Explain CDMA.
b) Explain radio layer of GSM.
- 15.a) Explain Mobile IP registration process.
b) Explain Fast retransmit / fast recovery mechanism.
- 16.a) Explain TDMA.
b) Explain linear modulation techniques.
17. Write short notes on :
a) FDMA b) DHCP

FACULTY OF ENGINEERING**B.E. 4/4 (IT) I – Semester (New) (Main) Examination, November 2013****Subject: Adhoc 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)**

1. Briefly discuss about QOS routing. (3)
2. What are wireless sensor networks? List any two applications of WSN. (3)
3. List out the overacting issues. (3)
4. List out the examples of category 1 WSN applications. (2)
5. Define flooding. (2)
6. List some attack prevention techniques. (2)
7. Briefly discuss about modified TCP. (3)
8. List the design challenges of Adhoc Networks. (2)
9. List out the transport layer protocols in Adhoc Networks. (2)
10. Define location based routing. (3)

PART – B (50 Marks)

- 11.(a) Explain about Radio Technology Primer. (6)
- (b) Discuss the fundamentals of MAC protocols for WSN. (4)
- 12.(a) Distinguish between proactive and reactive routing protocols. (5)
- (b) Write a note on evaluating adhoc network protocols. (5)
- 13.(a) Explain about TCP and Adhoc networks. (5)
- (b) Discuss about TCP-aware cross-layered solutions. (5)
14. Explain in detail about intrusion detection techniques. (10)
- 15.(a) Write a note on sensor node technology. (5)
- (b) Write a note on sensor taxonomy. (5)
- 16.(a) List all the comparison of protocols used in adhoc networks. (6)
- (b) Briefly discuss about various potential attacks. (4)
17. Discuss the following:
 - a) Vulnerabilities of mobile adhoc networks. (4)
 - b) Multicasting protocols. (6)

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B.E. 4/4 (IT) I – Semester (New) (Main) Examination, November 2013

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 is distributed systems? (2)
2. What is the role of middleware in distributed system? (3)
3. Explain the difference between transient and persistent objects. (2)
4. What do you understand by static and dynamic remote method invocation? (3)
5. What is stateless server? (2)
6. Define Namespace. (3)
7. What is the role of interceptor in CORBA? (2)
8. Explain the authentication levels in DCOM. (3)
9. Explain the characteristics of multimedia data. (3)
10. What is fair-scheduling? (2)

PART – B (50 Marks)

- 11.a) Explain the differences between homogenous multicomputer system and heterogeneous multicomputer systems. (5)
- b) Explain briefly the goals of distributed system. (5)
- 12.a) What is stream synchronization? Explain. (5)
- b) What is message queuing system? Explain. (5)
- 13.a) Explain the approaches of locating mobile entities. (5)
- b) Describe the role of threads in distributed system. (5)
- 14.a) Explain the CORBA naming service. (5)
- b) What is DCOM? Briefly explain about DCOM services. (5)
- 15.a) Explain about resource scheduling in distributed multimedia system. (5)
- b) Define quality of Service Manager's task in distributed multimedia system. (5)
- 16.a) Explain message oriented persistent communication. (5)
- b) What is software agents in distributed system? Explain. (5)
17. Write short notes on the following : (5)
- a) Network operating system (5)
- b) GLOBE (5)

FACULTY OF ENGINEERING

B.E. 4/4 (Common to All) I-Semester (New) (Main) Examination, December 2013

**Subject : Entrepreneurship
(Electives - I)**

Time : 3 Hours

Max. Marks: 75

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

PART – A (25 Marks)

1. What is meant by intrapreneur? How is an intrapreneur different from an entrepreneur?
2. Give different concepts of entrepreneurs.
3. State the significance of collaborative interaction for technology development.
4. What do you understand by marketing mix?
5. Define a project report.
6. Distinguish between PERT and CPM.
7. What is working capital?
8. What is selective control of inventory ? Why is it needed?
9. How is a project formulated?
10. What is microenterprise?

PART – B (50 Marks)

11. Explain linkages between small, medium and large industries.
- 12.(a) Explain about first generation entrepreneur.
(b) Explain about women entrepreneur.
- 13.(a) Write an essay on the growth of entrepreneurship in India.
(b) How are Competence, Opportunities and Challenges related to each other?
14. What do you understand by project identification? Discuss with examples, the process involved in project identification.
- 15.(a) How is a project formulated? Give an overview.
(b) What do you understand by project appraisal ? Why it is done?
- 16.(a) What are various factors motivating people to become entrepreneurs?
(b) Discuss the advantages and limitations of PERT and CPM with suitable examples.
17. Write short notes on the following:
 - (a) Technical Feasibility
 - (b) Market Assessment
 - (c) Working Capital

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B.E. 4/4 I – Semester (Old) Examination, December 2013

Subject: Entrepreneurship (Elective – I)

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. Enumerate at least three advantages of SSI units over large units.
2. List the advantages and disadvantages of Private Limited Company over 'Sole Trader'.
3. Explain the factors to be considered while deciding on the choice of technology.
4. What is break-even analysis? Explain its use in financial analysis of a project.
5. What are the sources of short-term funds?
6. How do you carry out business opportunity survey?
7. When do you use PERT? Give two examples.
8. Explain any two qualities of Leadership.
9. Describe the need for achievement, need for affiliation and need for power.
10. What is working capital? How do you estimate it?

PART – B (50 Marks)

- 11.(a) Define leadership. Justify the statement "The essence of leadership is followership".
(b) What are the theories of leadership? Explain.
12. What Time Management Techniques are available that ensure a project being completed on time.
- 13.(a) Bring out the relationship between economic growth and entrepreneurship.
(b) What is CPM? Explain its use in planning a project execution for a SSI.
- 14.(a) What are the risks faced and rewards gained by entrepreneurs while setting up a SSI?
(b) What is business opportunity survey? Explain how do you carryout the same.
- 15.(a) What are the problems and risks faced by women entrepreneurs?
(b) What is margin money? What are the sources of finance for starting a SSI?
16. What are the issues considered in Technical and Financial analysis of a project? Explain how you will carryout the same.
17. For any project known to you, show a detailed project report.
