

**FACULTY OF ENGINEERING****B.E. 4/4 (CSE) I-Semester (Main) Examination, November / December 2012****Subject : Advanced Computer Architecture  
(Elective-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. Explain basic parallel techniques. (3)
2. List out the basic approaches of ILP-instruction scheduling. (2)
3. Define Shelving buffering. (2)
4. What is ILP? Give examples. (3)
5. Explain hypercube connectivity of data-parallel architectures. (3)
6. What are neural computers? (2)
7. Describe synchronicity of systolic programmatically. (3)
8. What are the applications of convex system? (2)
9. List out the problems of scalable computers. (2)
10. Explain static data flow architecture. (3)

**PART – B (5x10=50 Marks)**

11. Discuss data dependencies and control dependencies. (10)
12. Discuss superscalar instruction issue policies. (10)
13. Explain the massively parallel processor of fine-grained SIMD architecture. (10)
14. Discuss design space of systolic architectures. (10)
15. Discuss hybrid multithreaded architectures. (10)
- 16 Explain about the associative string processor. (10)
- 17.(a) Discuss commercial VLIW architecture. (6)  
(b) Explain guarded execution. (4)

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**FACULTY OF ENGINEERING****B.E. 4/4 (CSE) I-Semester (Main) Examination, November / December 2012****Subject : Image Processing  
(Elective-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 Psycho visual Redundancy? (2)
2. What is histogram? How is it useful? (2)
3. What is run length coding? (2)
4. What are the various image compression standards? (2)
5. State the filters used for image smoothing. (2)
6. What is noise? State the various noise models. (3)
7. Give the mask used for detecting horizontal, vertical,  $+45^0$  and  $-45^0$  slanting lines. (3)
8. What are the properties of 2D Fourier transform? (3)
9. Briefly discuss the elements of visual perception. (3)
10. Differentiate image processing, image analysis and computer vision. (3)

**PART – B (5x10=50 Marks)**

11. Discuss image sampling and quantization. (10)
12. Explain image sharpening methods in frequency domain. (10)
13. Explain Minimum Mean Square Error Filtering. (10)
14. What is image segmentation? Explain thresholding approach of segmenting an image. (10)
15. Explain how minimum distance classifier is useful for classifying different pattern classes. (10)
16. Explain the Huffman coding of image compression. (10)
17. Discuss the various linear transformations. (10)

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**FACULTY OF ENGINEERING****B.E. 4/4 (CSE) I-Semester (Main) Examination, November / December 2012****Subject : Information Security  
(Elective-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. Distinguish between passive and active security attacks. List out some active and passive attacks. (2)
2. List and explain the components of information systems. (3)
3. What is the difference between Data Authentication and Data Confidentiality? (2)
4. What is a digital signature? (2)
5. Differentiate between symmetric and asymmetric key cryptography. (3)
6. What is a gateway? (2)
7. Explain Security threats. (3)
8. Define firewalls. (3)
9. Name two analysis tools. (2)
10. What are filters and name one filter? (3)

**PART – B (5x10=50 Marks)**

11. Explain in detail about the characteristics of information and the security system development life cycle. (10)
- 12.(a) What are measures required for controlling risk? (5)  
(b) What are the ethical components in information security? (5)
- 13.(a) Distinguish between a stream cipher and a block cipher. (4)  
(b) Explain about SHA-1 hash function. (6)
14. What do you mean by intrusion? Explain in detail about the architecture and types of intrusion detection systems. (10)
- 15.(a) In RSA given  $n$  and  $\phi(n)$  calculate  $p$  &  $q$ . (7)  
(b) In RSA given  $n=221$ ,  $e=5$  find  $d$ . (3)
16. Explain in detail about DES. (10)
17. Write in detail about SSL and SET protocols. (10)

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**FACULTY OF ENGINEERING****B.E. 4/4 (CSE.) I-Semester (Main) Examination, November / December 2012****Subject : Middleware Technologies  
(Elective-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. Write the advantages of adopting SOA. (2)
2. What is the purpose of Middleware? (3)
3. What is the difference between session Bean and Entity Bean? (3)
4. Write the applications of EJB. (2)
5. What are the steps to build an EJB application? (3)
6. What is the purpose of ORB? (2)
7. Distinguish between CORBA and COM. (3)
8. What is the role of proxy? (2)
9. What is Marshalling? (2)
10. Write the structure of IDL file. (3)

**PART – B (5x10=50 Marks)**

- 11.(a) Briefly explain the client server architecture. (5)  
(b) Explain different types of servers. (5)
- 12.(a) Explain different services provided by EJB. (5)  
(b) Explain roles in EJB development. (5)
- 13.(a) Compare and contrast stateful session beans with stateless session beans. (6)  
(b) Explain the life cycle of Entity Bean. (4)
- 14.(a) Discuss the issues involved in CORBA object model in detail. (5)  
(b) Write a CORBA client application to say "Hello". (5)
- 15.(a) How proxy and stub are generated in remote communication? Describe in detail how communication takes place with diagram. (7)  
(b) Differentiate between static invocation interface and dynamic invocation interface. (3)
- 16.(a) Explain the .Net Architecture in detail. (6)  
(b) What is Web service? Explain WSDL components. (4)
17. Write short notes on : (5+5)  
(a) REST services  
(b) ORB

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**FACULTY OF ENGINEERING**  
**B.E. 4/4 (CSE) I-Semester (Main) Examination, November / December 2012**

**Subject : Simulation and Modeling**  
**(Elective-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 simulation and what are the areas of applications of simulation? (3)
2. How do you simulate queuing systems ? Give the flow diagrams. (3)
3. Give example of manual simulation using event scheduling. (3)
4. What are the basic properties of list processing? (3)
5. Draw the GPSS block diagram for the single-server queue simulation. (3)
6. What is the steady-state behaviour of finite-population model? (2)
7. List the properties of random numbers. (2)
8. How do you perform frequency test for random numbers? (2)
9. What is triangular distribution ? (2)
10. How do you construct a histogram ? (2)

**PART – B (5x10=50 Marks)**

11. Explain the simulation of inventory system with an example. (10)
12. List the characteristics of queuing system. (10)
13. Enumerate the different types of distribution in "Inverse-Transform Technique". (10)
14. Describe briefly different ways of identifying distribution with data. (10)
15. (a) How do you verify the data in simulation model? (5)  
 (b) How is validating input-output transformation is carried out? (5)
16. Discuss in brief the following: (2x5)  
 (a) FORTRAN  
 (b) GPSS
17. Write short notes on the following: (2x5)  
 (a) Poisson Distribution  
 (b) Gamma Distribution  
 (c) Convolution method

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**B.E. 4/4 (Common to All) I-Semester (Main) Examination, November / December  
2012**

**Subject : Entrepreneurship  
(Elective-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. Define entrepreneurship. (2)
2. What are the salient features of small scale industries? (3)
3. Differentiate between manager and an entrepreneur. (2)
4. Explain briefly about first generation entrepreneurs. (2)
5. What are the various sources of project financing in India? (2)
6. List out various factors to be considered in choosing the right technology. (2)
7. Define a project and mention different parameters to be considered in project formulation. (3)
8. Discuss about significant features of marketing analysis. (3)
9. What is behaviour? And explain the role of motivation in behaviour of an entrepreneur. (3)
10. Define personality and list out its various attributes. (3)

**PART – B (5x10=50 Marks)**

- 11.(a) List out various opportunities and challenges of entrepreneurs in Indian context. (5)
- (b) Explain the role of entrepreneurs in developing the economical status of a country. (5)
- 12.(a) Explain in detail about women entrepreneurs by highlighting the favourable conditions for them in Indian context. (5)
- (b) Define an Idea and elaborate various methods used for Idea generation. (5)
13. What is project formulation? Explain in detail about marketing, financial and technical analysis in project formulation. (10)
14. Discuss in detail about the concept and salient features of PERT and CPM techniques and explain their role in helping an entrepreneur in successful completion of a project. (10)
- 15.(a) What is leadership? How any entrepreneur develops leadership qualities required to be successful in his profession? (5)
- (b) Explain in detail about Time management matrix. (5)
- 16.(a) Discuss about the concept of assessment of text burden and how it will be helpful to an entrepreneur in planning and managing finance effectively. (5)
- (b) "Entrepreneurs are made not born". Give your views with proper justification. (5)
17. Write short notes on any three of the following : (10)
  - (a) Partnership firm
  - (b) Large scale industries
  - (c) Human aspects in project management
  - (d) Change behaviour

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**B.E.4/4 (CSE) I – Semester (Main) Examination, November/December 2012**

**Subject: Adhoc and Sensor Networks  
(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. What are Adhoc Networks? (2)
2. List some proactive routing protocols. (3)
3. What is Broadcasting? (2)
4. Briefly discuss about Adhoc Transport protocol. (3)
5. Define QoS. (2)
6. List the vulnerabilities of Mobile Adhoc Network. (3)
7. What are Wireless Sensor Networks? (2)
8. List different applications of WSN. (3)
9. Describe briefly about Wireless Transmission technology of Wireless Sensor Networks. (3)
10. List some MAC protocols for WSN. (2)

**PART – B (5x10 = 50 Marks)**

11. Discuss in detail about Adhoc Network Applications and Design Challenges.
12. Describe in detail about various routing protocols in Mobile Adhoc Networks.
13. Explain about:
  - (a) TCP and Adhoc Networks
  - (b) Modified TCP.
  - (c) TCP – aware cross-layered solutions.
14. Discuss in detail about the issues regarding security in Mobile Adhoc Networks.
- 15.(a) Describe the applications of Wireless Sensor Networks.  
(b) Give an introduction to basic wireless sensor technology.
- 16.(a) Describe the Fundamentals of MAC protocols for Wireless Sensor Networks.  
(b) Write notes on Wireless Transmission Radio Technology primer and available wireless technologies.
17. Discuss about:
  - (a) QOS routing
  - (b) Adhoc Transport Protocol
  - (c) Design Challenges for Adhoc Networks.

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