8E8161

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8E8161

B.Tech. VIII Semester (Main) Examination, April/May-2017
Computer Science & Engineering
8CS1A Mobile Computing
Common with 8IT4.1

Time : 3 Hours **Maximum Marks : 80**
Min. Passing Marks : 26

Instructions to Candidates:

*Attempt any **five questions**, selecting **one question** from **each unit**. All Questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Unit-I

1. a) What is mobile computing? Write down the applications of mobile computing. **(8)**

   b) What is adaptation in mobile computing? Explain mechanism of adaptation. **(8)**

OR

1. a) What is mobility management? Explain location management principle and techniques. **(10)**

   b) Explain energy efficient indexing on air. **(6)**

Unit-II

2. a) What is Data dissemination? What issues facing in data dissemination? **(6)**

   b) Describe caching management in mobile and cache management schemes. **(10)**

OR

2. a) What is mobile middleware? How is it being used? What are its benefits? **(10)**

   b) Explain bandwidth allocation for publishing. **(6)**

Unit-III

3. a) What is services discovery and standardization method? Explain in detail. **(10)**

   b) Briefly explain Eventing. **(6)**

OR

3. a) Explain middle ware for application development. Also explain middle ware challenges. **(8)**

   b) Write a short note on : **(2×4=8)**

      i) Service catalogs

      ii) Garbage collection

Unit-IV

4. a) What is mobile environment? Explain database system in mobile environment. **(8)**

   b) What is mobile IP? Explain how mobile IP work in detail. **(8)**

OR

4. a) Explain the system architecture of world wide web. **(6)**

   b) What is the difference b/w stateful and state less protocol? **(4)**

   c) Write a short note on mobile TCP. **(6)**

Unit-V

5. a) What is Ad-Hoc Network? What are the main issues of MAC protocol for adhoc network? **(6)**

   b) What is Routing protocol? Explain DSR in detail. **(10)**

OR

5. a) What are pro-active and Re-active routing protocols? Explain AdHoc on demand distance vector routing. **(12)**

   b) What are applications of Ad Hoc Network? **(4)**

8E8061

Roll No. _____ [Total No. of Pages : 3

8E8061

B.Tech. VIII Semester (Main/Back) Examination, April/may - 2017
Information Technology
8IT1A Software Testing and Validation

Time : 3 Hours **Maximum Marks : 80**
Min. Passing Marks : 26

Instructions to Candidates:

*Attempt any **five questions**, selecting **one question** from **each unit**. All Questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Unit-I

1. a) Describe the software testing principle. How does testing help in producing quality software? **(6)**

b) What is White Box Testing? Discuss the pros and cous of white box testing. What is structural testing? **(3+3+4=10)**

OR

1. a) What is the difference between unit verification and unit varidation? **(6)**

b) Define : **(3+4+3=10)**

i) Testing and validation

ii) Black box testing and white box testing

iii) Automated testing and manual testing

Unit-II

2. a) What is defect bush? List the practices that defect bush brings and are popular in testing industry. **(4+4=8)**

b) What is performance testing? Write the tool and process for performance testing. **(3+5=8)**

OR

2. a) What is system testing? Explain how functional testing is different from non-functional testing. **(3+5=8)**

b) Explain acceptance testing and acceptance criterias. **(4+4=8)**

Unit-III

3. What do you understand by the terms internationalization, localization, globalization concept of testing? Also explain the phases of Internationalization testing. **(8+8=16)**

OR

3. Explain following testing (any two) : **(8+8=16)**

a) Exploratory testing

b) Regression testing

c) Agile and Extreme testing

Unit-IV

4. What is OOP. What are the differences between testing a procedural software and an object oriented software? List the tools used for testing of object oriented testing. **(4+6+6=16)**

OR

4. a) What is usability testing? **(4)**

b) When do we implement usability testing and explain the quality factor for usability? **(6)**

c) Discuss the various tools for usability. **(6)**

Unit-V

5. a) What are test matrices? Explain its types with examples. **(10)**

b) Explain test planning and when should you begin it explain. **(6)**

OR

5. Describe the test process reporting. What is scope of automation? **(16)**

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8E8162

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8E8162

B.Tech. VIII Semester (Main/Back) Examination, April/May-2017
Computer Science & Engineering
8CS2A Digital Image Processing
CS & IT

Time : 3 Hours **Maximum Marks : 80**
Min. Passing Marks : 26

Instructions to Candidates:

*Attempt any **five questions**, selecting **one question** from **each unit**. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Unit-I

1. a) Define the image. Explain the steps of digital image processing with suitable diagram. **(8)**

   b) Explain the applications of digital image processing. **(8)**

(OR)

1. a) Explain image sensing and acquisition. **(8)**

   b) Explain color vision model with example. **(8)**

Unit-II

2. a) What do you understand by Histograms processing. Explain its specifications. **(8)**

   b) What is spatial filtering? Define spatial correlation and convolution with an examples. **(8)**

(OR)

2. a) Explain the properties of Fourier transform in detail. **(8)**

   b) Write a short notes on : **(8)**

      i) Colour transforms

      ii) Wavelet transforms

Unit-III

3. a) Explain image degradation and restoration process. **(10)**

   b) Explain noise and inverse filtering. **(6)**

(OR)

3. Design Homo morphic filtering. How do we get back the modified image? **(16)**

Unit-IV

4. a) Describe Lossy compression techniques. **(10)**

   b) Explain Huffman coding with example. **(6)**

(OR)

4. Write a short notes on (any two) : **(16)**

   a) Interpixel redundancy

   b) Psychovisual redundancy

   c) JPEG compression

   d) Coding redundancy

Unit-V

5. a) Explain edge detection in detail. **(8)**

   b) Explain region based segmentation with suitable example. **(8)**

(OR)

5. a) Explain hough transforms. **(8)**

   b) Explain about thresholding. **(8)**

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8E8163

Roll No. _____ [Total No. of Pages : 2

8E8163

B.Tech. VIII Semester (Main/Back) Examination, April/May-2017

Computer Science & Engineering

8CS3A Distributed Systems

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 26

Instructions to Candidates:

*Attempt any **five questions**, selecting **one question** from **each unit**. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Unit-I

1. a) State and explain the challenges of distributed system. **(10)**

   b) Explain Architecture models. **(6)**

OR

1. a) Define the term distributed system and explain with two examples. **(6)**

   b) What is theoretical issues in distributed system? **(6)**

   c) Explain Distributed Computing Environment (DCE). **(4)**

Unit-II

2. Discuss the design and implementation issues in Remote Method Invocation. **(16)**

OR

2. a) Discuss the detail about communication and invocations **(8)**

   b) Where do you need RPC? Explain with suitable example. **(8)**

Unit-III

3. a) Classify the type of transparency that a distributed file system should support? **(8)**

   b) What is distributed process implementation and also explain static process scheduling with communication. **(8)**

OR

3. Write short note on (any two) : **(2×8=16)**

   a) General parallel file system and window's file system

   b) Andrew and coda file systems

   c) Sun network file system

Unit-IV

4. a) Explain how mutual exclusion is handled in distributed system? **(8)**

   b) What is the implementation of DSM system? **(8)**

OR

4. a) Describe mechanism for deadlock detection in distributed system. **(6)**

   b) What is Dynamic distributed manager algorithm and also explain Thrashing? **(10)**

Unit-V

5. a) Define Byzantine agreement problem with its solution. What do you mean by agreement protocol? **(8)**

   b) Discriminate passive replication and active replication. **(8)**

OR

5. Write short notes on (any two) : **(2×8=16)**

   a) Atomic Multicast

   b) CORBA RMI

   c) Failure and Recovery in DS

   d) Byzantine faults

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8E8062

Roll No. _____ [Total No. of Pages : 2

8E8062

B.Tech. VIII Semester (Main/Back) Examination, April/May - 2017
Information Technology
8IT3A Data Compression Techniques

Time : 3 Hours **Maximum Marks : 80**
Min. Passing Marks : 26

Instructions to Candidates:

*Attempt any **five questions**, selecting **one question** from **each unit**. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Unit-I

1. a) What do you understand by lossy techniques? Explain by giving suitable examples. **(8)**

   b) Write the merits of compression Techniques. **(8)**

OR

1. a) Explain the Derivation of average information. **(8)**

   b) Explain Huffman codes for loss-less image compression. **(8)**

Unit-II

2. a) What is JPEG-LS? Write down its algorithm. **(8)**

   b) Explain LZ77 in detail. **(8)**

OR

2. a) What is Burrows-Wheller algorithm? **(8)**

   b) Explain T.4 and T.6 in detail. **(8)**

Unit-III

3. a) Explain LBG algorithm of vector quantization. **(8)**

   b) Explain uniform and non-uniform quantization. **(8)**

OR

3. a) Explain the Linde-Ruzo-Grey algorithm. **(8)**

   b) What is conditional entropy? Explain probability and linear system models in detail. **(8)**

Unit-IV

4. a) Write short note on DWHT. **(6)**

   b) Explain speech and image coding in detail. **(10)**

OR

4. a) What is differential encoding? Explain adaptive DPCM in detail. **(10)**

   b) Write short note on DST. **(6)**

Unit-V

5. a) Discuss the role of OMF in Sub-Band Coding. **(8)**

   b) Write down the application of G.722 **(8)**

OR

5. a) Implement scaling function using filters. **(8)**

   b) Explain about filter Banks. **(8)**

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8E8165

Roll No. _____ [Total No. of Pages : 2

8E8165

B.Tech. VIII Semester (Main/Back) Examination, April/May - 2017
Computer Science & Engineering
8CS4.2A Real Time Systems

Time : 3 Hours **Maximum Marks : 80**
Min. Passing Marks : 26

Instructions to Candidates:

*Attempt any **five questions**, selecting **one question** from **each unit**. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Unit-I

1. a) Explain the basic model of real time system? **(8)**
   b) Explain the Radar signal processing system with diagram. **(8)**

(OR)

1. a) Explain the difference between : **(4+4=8)**
      i) Tardiness v/s usefulness
      ii) Absolute deadline v/s relative Deadline
   b) Explain the difference between soft real time system and hard real time system? **(8)**

Unit-II

2. a) Explain the following : **(5+5)**
      i) Functional parameter of a job
      ii) Fixed, jittered and sporadic release time
   b) What do you mean by precedence constraints among the jobs? Explain. **(6)**

(OR)

2. a) Describe clock driven and weighted round robin scheduling algorithm with example. **(10)**
   b) Explain dynamic versus static system. **(6)**

Unit-III

3. a) What are the frames and major cycles in cyclic schedules? What are the different frame size constraints? **(4+6)**

   b) What are the different method to improve the average response time of aperiodic jobs? Explain. **(6)**

(OR)

3. a) Explain RM and DM algorithm with suitable example. **(10)**

   b) What do you mean by fixed priority algorithm? Explain. **(6)**

Unit-IV

4. Explain the following in detail : **(8+8=16)**

   a) Polling server

   b) Deferrable server

(OR)

4. a) Explain the priority exchange algorithm. **(8)**

   b) What is flexible computation? Explain the characterization of flexible application. **(8)**

Unit-V

5. a) What is critical section? Explain mutual exclusion. **(8)**

   b) What do you mean by resource conflicts and blocking? Explain. **(8)**

(OR)

5. Explain the rules of basic priority ceiling protocol. Consider the following system of five jobs, schedule the following five jobs with basic priority ceiling protocol. **(6+10=16)**

Job	r_i	e_i	π_i	Critical section
J_1	7	3	1	[Shaded;1]
J_2	5	3	2	[black;1]
J_3	4	2	3	–
J_4	2	6	4	[Shaded; 4[black;1.5]]
J_5	0	6	5	[black; 4]

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8E5002

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8E5002

B.Tech. VIII Semester (Back) Examination, April/May-2017
Computer Sc. and Engg.
8CS2(O) Information System Security
CS & IT

Time : 3 Hours **Maximum Marks : 80**
Min. Passing Marks : 26

Instructions to Candidates:

*Attempt any **five questions**, selecting **one question** from **each unit**. **All Questions** carry **equal** marks. Schematic diagrams must be shown wherever **necessary**. **Any** data you feel missing suitable be assumed and stated clearly. **Units of quantities** used/calculated must be stated clearly.*

Unit-I

1. a) What do you mean by abelian group? Prove that a set of integer under addition (Z,+) is an abelian group? **(10)**

   b) What is key equivocation and unicity distance explain in detail? **(6)**

OR

1. What are the problem with the pseudoprimalitiy test and how can overcome these problem by using the miller rabin randomized primality test algorithm? **(16)**

Unit-II

2. a) What is cryptography? Draw and explain the model of conventional cryptography and it's components. **(8)**

   b) Explain S-box theory in detail. **(8)**

OR

2. a) What is the concept of IDEA? Explain the concept of round IDEA. **(8)**

   b) Explain the Lucifer algorithm in detail and what are the limitation of Lucifer algorithm. **(8)**

Unit-III

3. Describe the Diffie-hellman key exchange algorithm in detail. Also decuess "Non in the middle attack" problem associated with the algorithm. **(16)**

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OR

3. a) Perform incryption and decryption using RSA algorithm. **(8)**

P = 3 Q = 11E (public key) = 7

M (plain text) = 5

b) Differentiate between symmetric and asymmetric key cryptography. **(8)**

Unit-IV

4. a) Explain the concept of MAC and it's function. **(8)**

b) What is the property of digital signature? Explain. **(8)**

OR

4. a) Explain MD5 message digest algorithm with its logic and compression function. **(10)**

b) Explain the model of authentication system. **(6)**

Unit-V

5. What is certificate revocation? Why we need certificate revocation and what is the Concept of Certificate Revocation List (CRL)? **(16)**

OR

5. Writs short note : **(4×4)**

a) PGP trust model

b) R64 conversion

c) Need of MIME

d) Three way authentication