

B.E (COMPUTER) (SEM VIII) (REV) EXAMINATION, OCTOBER, 2013

LJ-13673 Multimedia System Design

Wednesday,

4th December, 2013.

Time: 11.00 am to 2.00 pm

B.E (COMPUTER) (SEM VIII) (REV) EXAMINATION, OCTOBER, 2013

LJ – 13844 Distributed Computing

Tuesday,

10th December, 2013

Time: 11.00 am to 2.00 pm

B.E (COMPUTER) (SEM VIII) (REV) EXAMINATION, OCTOBER, 2013

LJ-13531 Elective : II : Human Computing Interaction

Monday,

25th November, 2013

Time: 11.00 am to 2.00 pm

B.E (COMPUTER) (SEM VIII) (REV) EXAMINATION, OCTOBER, 2013

LJ-13534 Elective : II : Computer Vision

Monday,

25th November, 2013

Time: 11.00 am to 2.00 pm

B.E (COMPUTER) (SEM VIII) (REV) EXAMINATION, OCTOBER, 2013

LJ-13537 Elective : II : Advanced Internet Technology

Monday,

25th November, 2013

Time: 11.00 am to 2.00 pm

B.E (COMPUTER) (SEM VIII) (REV) EXAMINATION, OCTOBER, 2013

LJ-13540 Elective : II : Embedded System

Monday,

25th November, 2013

Time: 11.00 am to 2.00 pm

B.E (COMPUTER) (SEM VIII) (REV) EXAMINATION, OCTOBER, 2013

LJ – 13610 Software Architecture

Friday,

29th November, 2013

Time: 11.00 am to 2.00 pm

(REVISED COURSE)

(3 Hours)

[Total Marks : 100

- N. B. :**
- (1) Question No. 1 is **compulsory**.
 - (2) Attempt any **four** questions out of **remaining** questions.
 - (3) **Figures to right** indicates **full** marks.

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|----|--|----|
| 1. | (a) What is direct and indirect manipulation ? | 5 |
| | (b) Explain different types of windows. | 5 |
| | (c) Explain influences on icon usability | 5 |
| | (d) Compare GUI and Web page. | |
| 2. | (a) What are the mental models and why are they important in interface design ? | 10 |
| | (b) Discuss various software specification methods. | 10 |
| 3. | (a) Explain important human characteristics that need to be considered in UI design. | 10 |
| | (b) What are Pointing devices ? Explain about direct control pointing devices. | 10 |
| 4. | (a) Explain in detail about the following techniques determining requirements categorize them as direct or indirect method : | 10 |
| | (i) Traditional focus group | |
| | (ii) Competitor analysis | |
| | (iii) Card sorting | |
| | (iv) Facilitated team workshop. | |
| | (b) Explain proper device base controls. Explain key boards with its layout, keys and function keys. | 10 |
| 5. | (a) What are the possible uses of colors and problems associated with it ? | 10 |
| | (b) Explain Graphical system, also explain advantages and disadvantages of it. | 10 |
| 6. | (a) Discuss Physical and Psychological effects of poor design on human. | 10 |
| | (b) Explain the guidelines for scanning, browsing and searching the web. | 10 |
| 7. | (a) Explain structures and types of menu. | 10 |
| | (b) Describe various selection and presentation controls. | 10 |

N.B. : (1) Question No. 1 is **Compulsory**.

(2) Answer any **four** questions out of remaining **six** questions.

(3) Assume **suitable data** whenever **necessary** and justify the same.

(4) **Figures** to the **right** indicate **full marks**.

1. (a) Explain view class matching. 5
- (b) What is significance of Shape no. in region analysis. 5
- (c) Global v/s local features. 5
- (d) Define vanishing point and vanishing line. 5

2. (a) Give all the steps involved in recognition methodology and briefly explain each. 10
- (b) For the following image, calculate $m(0,0)$, $m(1,0)$, $m(0,1)$, $m(2,0)$, $m(0,2)$ and $m(2,2)$. 10

	1	2	3	4	\rightarrow y
1	3	1	2	0	
2	2	0	3	1	
3	2	3	1	0	
4	1	3	0	2	
\downarrow x					

3. (a) What is importance of image segmentation in computer vision? Explain following methods of image segmentation by giving appropriate illustrations" 10
 - (i) Region growing
 - (ii) Split and Merge
- (b) Explain Least square method of curve fitting. 10

4. (a) Explain Border Tracking algorithm with suitable example. 10
- (b) What is control strategies? Discuss the two major forms of control hierarclical and heterarclical. 10

5. (a) Explain in detail the Consistent labelling problem. **10**
- (b) What is image matching? Explain intensity matching of 1 dimensional signals. **10**
6. (a) Name different algorithm for connected component labelling. Explain any one in detail. **10**
- (b) What is Hough transform? Explain its use in edge linking. **10**
7. Write short note on:- **20**
- (i) Facet model recognition.
 - (ii) Principal component analysis.
 - (iii) Zero crossing edge detector.
 - (iv) Explain Information Integration.
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(REVISED COURSE)

(3 Hours)

[Total Marks : 100

- N. B. :** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** questions out of remaining **six**.

1. (a) Explain the working of DHCP with its packet format. **10**
 (b) Describe the Architecture of cloud computing and explain the categories of cloud services. **10**
2. (a) A DNS client is looking for the IP addresses corresponding to xxx.yyy.com and aaa.bbb.edu. Show the query and response messages if the addresses are 14.23.45.12 and 131.34.67.89. **10**
 (b) Explain the concept of command processing in FTP. **10**
3. (a) Explain the process of transition from IPV4 to IPV6. **10**
 (b) Describe any one Intra-domain routing protocol. **10**
4. (a) Differentiate between REST and SOA services for Internet Technology. **10**
 (b) Describe virtualization in cloud computing. **10**
5. (a) Explain any one web-application developed with the help of AJAX-PHP framework. **10**
 (b) Explain the working principle of search engine by giving suitable example. **10**
6. (a) Explain the concept of public key infrastructure. **10**
 (b) Discuss the mechanism used for secure payment. **10**
7. Write a short notes on any **four** :- **20**
 - (a) Multimedia over Internet
 - (b) Amazon S3
 - (c) RSS
 - (d) Client side vulnerabilities
 - (e) Database vulnerabilities.

(REVISED COURSE)

(3 Hours)

[Total Marks : 100

N.B. : (1) Question No. 1 is **compulsory**.(2) Attempt any **four** questions out of remaining **six** questions.(3) Assume **suitable** data wherever **necessary** state it.(4) **Figures** to the **right** indicate **full** marks.

1. (a) Compare the architecture features of general purpose processors verses application specific processes. **10**
- (b) Explain how task management is done in real time operating system. **10**
2. (a) Compare ARMY, ARMg and ARMII. **10**
- (b) What do you mean by Thumb mode and Normal mode in case of ARM processed. **10**
How switching between thumb and normal mode is carried out.
3. (a) Design and explain with the help of block diagram real-time image processing system using arm processor for securiy system. **10**
- (b) What are the benefits of linux for embedded software development. Explain GNU debugging ? **10**
4. (a) What is mail box ? How it passes message during inter process communication ? **10**
List the difference between mail box and pipe.
- (b) What do you mean system on-chip (SOC). Explain any example of SOC & its application. **10**
5. (a) Write a programme to count and display on LCD number of people entering & leaving a room. Also show interfacing diagram. **10**
- (b) Write a programme to read analog signal from trasnducer and display its equivalent value on LCD. Show inerfacing of controller with LCD. **10**
6. (a) Discuss hard & soft real time system in detail. **10**
- (b) Discuss how memory management is carried out in real time operating system. **10**

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7. (a) Write short note on following :-

20

- (i) RISC and CISC.
- (ii) Semaphore management in RTOS.
- (iii) Memory locking.
- (iv) Hardware software co-design.

- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Attempt any **four** from remaining **six** questions.
 (3) **Figures** to the **right** indicates **full** marks.

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|----|-----|--|----|
| 1. | (a) | Explain different types of inconsistencies in models. | 5 |
| | (b) | What is product line architecture? | 5 |
| | (c) | Compare and contrast stream connector and linkage connector. | 5 |
| | (d) | What is implicit invocation style? Explain with an example. | 5 |
| 2. | (a) | Explain ATAM in detail with diagram. | 10 |
| | (b) | What are architectural patterns? Explain any one pattern in detail with suitable example. | 10 |
| 3. | (a) | Explain REST architecture with diagram. | 10 |
| | (b) | What is consistency in analysis? | 10 |
| 4. | (a) | Compare and contrast event-based and client-server based data distribution connector. | 5 |
| | (b) | Discuss design issues for NFP: Scalability and heterogeneity. | 10 |
| | (c) | Name the stake holder for building software architecture with their roles. | 5 |
| 5. | (a) | Draw framework for classifying connectors and explain it in detail. | 10 |
| | (b) | What is prescriptive and descriptive architecture, Explain with example. | 10 |
| 6. | (a) | Discuss service oriented architecture (SOA) and web services. | 10 |
| | (b) | Explain model based and simulation based analysis techniques used in software architecture. | 10 |
| 7. | (a) | "Focus on architecture is a focus on Reuse". Comment. | 10 |
| | (b) | What is domain specific architecture? | 5 |
| | (c) | State with reason following statement is true or false : "Connectors are mostly application dependent elements." | 5 |

Con. 9497-13.**LJ-13673****(REVISED COURSE)****(3 Hours)****[Total Marks : 100****N. B. :** (1) Question No. 1 is **compulsory**.(2) Solve any **four** questions from remaining **six** questions.

(3) Assume suitable data wherever required.

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|--|----|
| 1. (a) Compare MPEG with H.264. | 5 |
| (b) Explain about defining objects for multimedia system. | 5 |
| (c) Compare TIFF Vs RIFF. | 5 |
| (d) Explain different video formats. | 5 |
| 2. (a) You are appointed as a consultant to set a multimedia laboratory of Intelligent software consultancy Pvt. Limited. Give the specifications of various components of multimedia system to set this laboratory. | 10 |
| (b) Explain multimedia system design steps. | 10 |
| 3. (a) Explain Streaming Protocols. | 10 |
| (b) Explain multimedia system architecture. | 10 |
| 4. (a) Explain WORM read/write operation in detail. | 10 |
| (b) Describe the CCITT group 3 standard. How does CCITT group 4 differ from CCITT group 3? | 10 |
| 5. (a) Explain chroma sub-sampling. | 5 |
| (b) What is HDTV Standard? | 5 |
| (c) Explain different motion vector search Techniques. | 10 |
| 6. (a) Explain human factors and design considerations related to virtual reality. | 10 |
| (b) Explain in detail MIDI Communication Protocol. | 10 |
| 7. Write short notes on any two :- | 20 |
| (a) Knowledge based Multimedia Systems. | |
| (b) Multimedia databases. | |
| (c) Copyright and methods of licensing for multimedia. | |
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(3 Hours)

[Total Marks : 100

N. B. : (1) Question No. 1 is **compulsory**.

(2) Attempt any **four** questions out of remaining **six** questions.

1. (a) Explain absolute ordering and causal ordering process with the help of example for many to many communication. 10
(b) Compare processes and threads explain user and kernel level threads execution and also the need of light weight threads. 10
2. (a) What are the good features of a distributed file systems ? Explain file sharing semantics of it. 10
(b) Discuss file caching for distributed system. 10
3. (a) What is physical clock synchronization ? Explain any one algorithm in detail. 10
(b) Explain main issues in building a DSM system on a network of heterogeneous machines. 10
4. (a) Explain deadlock avoidance algorithm in a distributed system. 10
(b) How are failures handled in message passing system in distributed system ? 10
5. (a) Explain centralized algorithm for mutual exclusion. What are the advantages and disadvantages of it over distributed algorithm ? 10
(b) Explain Marshalling/Unmarshalling mechanism in RPC/RMI. 10
6. (a) Explain the concept of load Balancing along with sender initiated algorithm. 10
(b) Explain distributed Resource Management with respect to distributed computing environment. 10
7. Write a short notes on :- 20
(a) Fault Tolerance
(b) Issues in designing of load sharing algorithm.
