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06CS74

Seventh Semester B.E. Degree Examination, June/July 2013
Embedded Computing Systems

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. What are major hardware units and devices in an embedded system? (10 Marks)
b. With the help of a neat diagram, explain the process of converting a C program into the file for ROM image. (10 Marks)
- 2 a. Explain with a neat diagram, the design process involved in an embedded system development. (10 Marks)
b. List various design challenges faced in designing an embedded system and methods to meet these challenges, with specific examples. (10 Marks)
- 3 a. List advantages and disadvantages of data transfer using serial and parallel ports. (10 Marks)
b. With a neat diagram, explain UART communication that uses handshaking signals. (10 Marks)
- 4 a. Explain the working of busy and wait transfer, highlighting its advantages. Mention a few applications where this method is used. (10 Marks)
b. Describe DMA transfer in an embedded system, with the help of a neat diagram. List the advantages of DMA transfer over interrupt driven transfer with a numeric example. (10 Marks)

PART – B

- 5 a. Give reasons for unfolding SDFGs into as many HSDFG (Homogeneous Synchronous Data Flow Graph) as feasible and then HSDFGs into as many APEGs (Acyclic Precedence Expansion Graph) as possible, with illustrations. (10 Marks)
b. What are the problems in modeling the processing of instruction in a multiprocessor system? Explain with an example of 2 processors PA and PB interfaced with the memory. (10 Marks)
- 6 a. What are various memory management strategies of an RTOS? (10 Marks)
b. Explain at least ten design principles when using an RTOS. (10 Marks)
- 7 a. What are various methods of saving and optimizing memory space in an embedded system? (10 Marks)
b. What are various performance metrics for an RTOS? (04 Marks)
c. Write important security functions required for RTOS security. (06 Marks)
- 8 a. Explain key features of simple target system with the help of a neat diagram. (06 Marks)
b. What are various OS porting issues in an embedded plat form? (09 Marks)
c. What are various subunits of back support hardware package and In-Circuit Emulator(ICE)? (05 Marks)

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06IS72

Seventh Semester B.E. Degree Examination, June/July 2013
Software Architectures

Time: 3 hrs.

Max. Marks: 100

**Note: Answer FIVE full questions, selecting
atleast TWO questions from each part.**

PART – A

1. a. What are the different activities involved in creating a software architecture. (06 Marks)
b. Briefly explain software architecture with definitions. (07 Marks)
c. Discuss software structures, in detail. (07 Marks)
2. a. Enlist architectural styles and explain event – based, implicit invocation, in brief. (06 Marks)
b. Explain the decomposition of the paper “KEYWORD IN CONTEXT” and give solution through,
i) Abstraction data types
ii) Implicitly invocation solution. (14 Marks)
3. a. Explain quality attribute scenarios for system quality attributes. (06 Marks)
b. Describe modifiability general scenario generation. (07 Marks)
c. Summarize availability tactics and write a brief note on them. (07 Marks)
4. a. Discuss in brief the pattern, from Mud to structure. (10 Marks)
b. Illustrate the behaviour of the black board architecture based on speech recognition and list the steps to implement black board pattern. (10 Marks)

PART – B

5. a. Explain in detail, the broker architectural pattern to structure distributed software system. (10 Marks)
b. What is Model – view architectural pattern? With an example illustration, write its structure and implementation over a scenario. (10 Marks)
6. a. List the participating components in a Micro Kernel pattern and derive the static structure of a Micro Kernel system. (06 Marks)
b. With an illustration, discuss the behaviour of Micro Kernel architecture when an external server requests a service that is provided by an internal server. (06 Marks)
c. Explain open implementation, Meta level architecture with reference to solution, structure and its implementation. (08 Marks)
7. Write short notes on :
a. Design pattern
b. Master -slave pattern
c. Whole – part pattern
d. Proxy pattern. (20 Marks)
8. a. Illustrate the evolutionary delivery life cycle model and describe a method for designing architecture to satisfy both quality requirements and functional requirement. (10 Marks)
b. Explain views with reference to concept, choosing the view and its documentation. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

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06IS74

Seventh Semester B.E. Degree Examination, June/July 2013
Data Mining

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. What is data mining? Explain the various data mining task with example. (08 Marks)
b. List and explain general characteristics of data sets. (06 Marks)
c. Explain measurement errors and data collection errors with example. (06 Marks)
- 2 a. Explain different sampling approaches with example. (08 Marks)
b. List the benefits of dimensionality reduction. (04 Marks)
c. Explain feature subset selection process with a flow chart. (08 Marks)
- 3 a. Write the Hunt's algorithm used to build decision tree. (06 Marks)
b. Explain characteristics of rule-based classifiers. (06 Marks)
c. Explain nearest neighbor classifier with algorithm. (08 Marks)
- 4 a. What is apriori principle? Explain. (06 Marks)
b. State and explain the requirements for candidate generation procedure. (06 Marks)
c. Explain different factors affecting the complexity of Apriori algorithm. (08 Marks)

PART – B

- 5 a. Explain how the FP tree is represented. (08 Marks)
b. Describe the effect of skewed support distribution. (06 Marks)
c. Explain Simpson's paradox. (06 Marks)
- 6 a. Write and explain basic-Kmeans algorithm. (08 Marks)
b. Explain different applications of cluster analysis. (06 Marks)
c. Write a note on DBSCAN. (06 Marks)
- 7 Explain the following in brief,
a. Spatial data mining.
b. Multimedia data mining.
c. Text mining.
d. Web mining. (20 Marks)
- 8 a. Explain the social impact of data mining. (10 Marks)
b. Describe the trends in data mining. (10 Marks)

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06CS/IS753

Seventh Semester B.E. Degree Examination, June/July 2013
JAVA and J2EE

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting
at least TWO questions from each part.**

PART – A

- 1 a. List and explain JAVA features. (10 Marks)
- b. Explain arrays in JAVA, with examples. (06 Marks)
- c. What is jump statement? Explain with examples. (04 Marks)
- 2 a. Why overridden methods are used in JAVA? Explain with an example. (08 Marks)
- b. What is command-line arguments? Write a program to demonstrate command-line arguments. (06 Marks)
- c. What are applets? Demonstrate how to pass parameters for font name, font size and type conversion in applet. (06 Marks)
- 3 a. What is meant by multithreaded programming? Explain with an example how inter thread communication is implemented in JAVA. (10 Marks)
- b. What is meant by thread priority? How is it assigned? (06 Marks)
- c. Write a note on event listener interfaces. (04 Marks)
- 4 a. Briefly explain containers and components in swings. (10 Marks)
- b. Write the steps to create J Table. Write a program to create a table with the column headings Name, USN, Age, Address and insert atleast five records in the table and display. (10 Marks)

PART – B

- 5 a. Give and explain J2EE multi-tier architecture. (08 Marks)
- b. Describe the various steps of JDBC process with an example. (08 Marks)
- c. Write a note on result set. (04 Marks)
- 6 a. What is a servlet? Explain life cycle of servlet. (06 Marks)
- b. What is a cookie? List out the methods defined by cookie. Write a program in HTML for adding a cookie. (10 Marks)
- c. Write a note on HTTP status codes. (04 Marks)
- 7 a. What is the difference between servlets and JSP? Explain different types of JSP tags with syntax. (06 Marks)
- b. What is RMI concept? Explain the server side and client side methods. (10 Marks)
- c. Write a note on request string. (04 Marks)
- 8 a. List and explain EJB transaction attributes. (06 Marks)
- b. With a skeleton explain session java bean. (06 Marks)
- c. Differentiate between stateless and stateful session bean. (04 Marks)
- d. Write a note on message – Driven Bean. (04 Marks)

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06CS/IS761

Seventh Semester B.E. Degree Examination, June/July 2013

C# programming and .Net

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting atleast TWO questions from each part.

PART – A

1.
 - a. Explain the .Net execution life cycle with the diagram. (05 Marks)
 - b. Discuss the advantages of multi language environment over single language environment. (05 Marks)
 - c. Discuss the building blocks of .Net with the neat diagram. (10 Marks)
2.
 - a. Explain the various output options available with C# compiler. (10 Marks)
 - b. Is it necessary to make Main() method as a static? Justify your answer, with example. (05 Marks)
 - c. What are immutable strings? Explain any four string method available in C#, with example. (05 Marks)
3.
 - a. Explain the static keyword, with respect to the following :
 - i) Data members
 - ii) Member methods
 - iii) Constructors. (10 Marks)
 - b. Write a program to assign a unique id to each of the object created by class Id should be assigned sequentially starting with 1 for the first object, 2 for the second object, 3 for third object and so on. (10 Marks)
4.
 - a. Write a C# program to illustrate the
 - i) is a relationship ii) has a relationship. (10 Marks)
 - b. Explain the use of “base” and “this” keyword, with example. (04 Marks)
 - c. Explain how to hide base class members, with an example. (02 Marks)
 - d. Explain the abstract class, with an example. (04 Marks)

PART – B

5.
 - a. Write a program in C# for the queue. Whenever a queue is filled, it should throw an exception. (10 Marks)
 - b. Discuss the functions of ‘new’ keyword in C# and explain, with an example. (05 Marks)
 - c. Write a program to destroy an object with the help of finalize() method. (05 Marks)
6.
 - a. Bring out the differences between abstract class and interfaces. (05 Marks)
 - b. Explain the multiple inheritance, with an example. (08 Marks)
 - c. Write a program to describe deep copy. (07 Marks)
7.
 - a. What is .Net deligate and explain its syntax with three important features. (03 Marks)
 - b. Write a program to illustrate how a deligate can be passed to method, creating at least two objects. (07 Marks)
 - c. What are events in C#? Explain with an example. (10 Marks)
8.
 - a. Write a program to illustrate the use of VB code in C#. (10 Marks)
 - b. What are private and shared assembly? Explain them. (10 Marks)

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06IS765

Seventh Semester B.E. Degree Examination, June/July 2013

User Interface Design

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. Explain with an example, the different goals of system engineering. (10 Marks)
b. List all the stages of action models. (04 Marks)
c. Explain how to achieve the consistency through grammars. (06 Marks)
- 2 a. Explain with a figure, the three pillars of successful user-interface development. (10 Marks)
b. What are the legal issues which are emerged in the user interface design? (06 Marks)
c. List all the expert review methods. (04 Marks)
- 3 a. What are the features of user-interface building tools? (06 Marks)
b. List all the advantages of WYSIWYG. (04 Marks)
c. Explain with a figure, the OAI model for direct manipulation. (10 Marks)
- 4 a. Explain the different approaches for accommodating the menu items for frequent users. (10 Marks)
b. What are the basic goals of language design? (06 Marks)
c. What are the potential strategies for abbreviations? (04 Marks)

PART – B

- 5 a. Explain the different features of keyboards and function keys. (10 Marks)
b. Explain the different display technologies used in the design of user interfaces. (10 Marks)
- 6 a. Explain the different principles that reveal the complexity of the designers task. (10 Marks)
b. What are the guidelines, benefits and dangers of using color? (10 Marks)
- 7 a. List all the steps involved in writing user documentation. (06 Marks)
b. What are the contents of a window interface objects? (04 Marks)
c. Explain with a figure, the image browsing in tightly-coupled windows. (10 Marks)
- 8 Write short notes on:
a. Genres and goals for designers
b. Task objects and actions
c. Design issues
d. Web-page design. (20 Marks)

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