

**URUMU DHANALAKSHMI COLLEGE,  
TIRUCHIRAPPALLI – 19  
[Accredited (Cycle-II) with ‘A’ Grade by NAAC]  
DEPARTMENT OF COMPUTER SCIENCE**

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**INSTRUCTION TO THE STUDENTS**

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**Steps for the submission of the assignment**

- 1. Write the answers on sheets.**
- 2. Take photo of these written sheets.**
- 3. Open MS word, insert all the photos using insert menu.**
- 4. Save the word file**
- 5. Send the file to [imscsexam@udc.ac.in](mailto:imscsexam@udc.ac.in)**

**On the first page of the assignment, write the following details**

- 1. Name**
- 2. Roll No**
- 3. Regno**
- 4. Class**
- 5. Subject\_name**

**If you need any further clarification, contact the HOD.**

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**DEPARTMENT OF COMPUTER SCIENCE**  
**M.Sc., - I Year**  
**OOAD AND UML (P16CS21)**

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**ASSIGNMENT-1**

**SUBMISSION- DATE: 16-04-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. What is System Development methodology?
2. What do you mean by object modeling?
3. What is UML?
4. Who are actors?
5. What is the difference between method and message object?
6. Define deployment diagram.
7. Define Axioms.
8. What do you mean by coupling?
9. List various database models.
10. What is 80-20 rule?

**PART-B**

**ANSWER ALL THE QUESTIONS**

- 11a) Write the difference between algorithm methodology and data centric Methodologies.  
b) What is prototyping and why it is useful?
- 12a) Discuss the difference between design pattern and frame work.  
b) Write briefly about the functionality of static model and dynamic model.
- 13a) Discuss why analysis is a difficult activity.  
b) What are unnecessary associations? How would you know?
- 14a) Discuss about the object oriented design axioms?  
b) Explain Myers's debugging principles.
- 15a) Discuss any one diagram which helps to describe static parts of a system.  
b) Discuss any one diagram which helps to describe dynamic parts of a system.

**PART-C**

**ANSWER ALL THE QUESTIONS**

16. Describe the macro process of the object oriented system development approach.
17. Discuss about object oriented methodologies proposed by Jacobson et al.
18. Explain association between objects.
19. What is task of view layer? Discuss the steps involved in design the view layer classes.
20. Describe modeling design patterns.

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**M.Sc., - I Year**  
**DISTRIBUTED TECHNOLOGY (P16CS22)**

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**ASSIGNMENT-1**

**SUBMISSION- DATE: 18-04-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. Define Distributed Computing.
2. Define MSIL.
3. What are the types of authentication?
4. What do you mean by Crystal Reports?
5. Define Site Navigation.
6. Define WSDL.
7. What are the views of advanced Ado.Net?
8. Define Web services.
9. Features of Website Development.
10. Define DotNet.

**PART- B**

**ANSWER ALL THE QUESTIONS**

- 11.a)What are the challengers involved in establishing remote connections. Explain  
b) Detail about current Distributed computing in ADO.NET.
- 12a)Detail about Grid View Control and with its properties.  
b) Describe about Detail View Control and with example.
- 13a) Explain Ad Rotator and with its properties.  
b) Define Catalog parts and its types of Catalog controls.
- 14a)Mobile Application Development in ASP.NET.  
b) Explain State Management in ASP.NET.
- 15a)Detail about SOAP concepts involved in web services.  
b)What are the important role of Web services in Distributed Computing?

**PART- C**

**ANSWER ALL THE QUESTIONS**

16. Describe Strategies involved in Remote Connection.
17. Explain Form View Control with suitable examples
18. Detail about Wizard and Image Map Control.
19. Password Recovery Control with examples.
20. Explain UDDI and its features.

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**DEPARTMENT OF COMPUTER SCIENCE**  
**M.Sc., - I Year**

**HUMAN COMPUTER INTERACTION (P16CSE1C)**

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**ASSIGNMENT-1**

**SUBMISSION- DATE: 20-04-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. Define Interaction.
2. What is meant by Interactivity?
3. What is design?
4. Define Design Rationale.
5. Define Standards.
6. What is HCI pattern?
7. What is evaluation?
8. What do you mean by Universal Design?
9. Define User Support.
10. What is an Adaptive Help System?

**PART – B**

**ANSWER ALL THE QUESTIONS**

11. (a) Explain the various models of Interaction.  
(b) State the basic concepts on Interactivity.
12. (a) State the underlying concepts of Navigation design.  
(b) What is Screen Layout? Explain.
13. (a) Enumerate the various principles to support Usability.  
(b) Write short notes on HCI patterns.
14. (a) Enumerate the various goals of evaluation.  
(b) How do you evaluate through expert analysis? Explain.
15. (a) Write short notes on User Support.  
(b) Enumerate the several requirements of user support.

**PART – C**

**ANSWER ALL THE QUESTIONS**

16. Discuss the concepts of Interaction Framework.
17. State the several roles of HCI in the Software Process.
18. Discuss about the various Golden rules and Heuristics.
19. State the necessary evaluation process through expert analysis.
20. Discuss the several approaches to user support.

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**DEPARTMENT OF COMPUTER SCIENCE**  
**M.Sc., - I Year**  
**Embedded Systems (P16CSE2A)**

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**ASSIGNMENT-1**

**SUBMISSION- DATE: 22-04-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. Define: Embedded Systems.
2. What is memory selection?
3. What are the advantages and disadvantages of interrupt driven data transfer?
4. Define: Preprocessor directives.
5. What is data flow graph model?
6. Define: Thread.
7. What is cyclic scheduling?
8. Define: CPU Load.
9. What is IDE?
10. What is the difference between interpreter and compiler?

**PART- B**

**ANSWER ALL THE QUESTIONS**

11. (a) What are the commonly used Microcontrollers in small, medium and large scale embedded systems? Explain.  
(b) What is ROM? Describe its uses, forms and variants.
12. (a) Write a note about device driver programming.  
(b) What are the advantages of high-level language programming? Explain.
13. (a) What is UML modeling? Explain.  
(b) What are tasks? Describe its states.
14. (a) What are the major goals of RTOS? Explain.  
(b) Explain the RTOS I/O sub subsystem.
15. (a) Explain the development process of embedded system.  
(b) Describe the main features of sources of engineering tool.

**PART- C**

**ANSWER ALL THE QUESTIONS**

16. Explain the general structural units in processor architecture.
17. Elucidate the use of
  - (a) Modifiers
  - (b) Loops
  - (c) Functions pointers
18. What is Inter-process communication? Explain.
19. What are Interrupt routines in RTOS? Explain how to handle it.
20. Describe the different software modules and where it is used for implementation of embedded systems.

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**OOAD AND UML (P16CS21)**

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**ASSIGNMENT-2**

**SUBMISSION- DATE: 24-04-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. What is meant by properties and methods?
2. Define objects.
3. What is meant by Framework?
4. How do you identify actors?
5. What is association?
6. What is generalization?
7. Write some characteristics of bad design.
8. Define private protocol.
9. What is distributed database?
10. What is behavior model?

**PART-B**

**ANSWER ALL THE QUESTIONS**

- 11a) What are meta classes? Discuss.  
b) Explain about building high quality software.
- 12a) Explain briefly about unified approach.  
b) Discuss about layered approach to software development.
- 13a) Briefly explain common class patterns approach.  
b) Draw the sequence diagram for withdraws checking use-case.
- 14a) Explain DOA design briefly.  
b) Write the type of coupling among objects.
- 15a) What is UML? Explain.  
b) Discuss about structural model.

**PART-C**

**ANSWER ALL THE QUESTIONS**

16. Write a detailed note on Software development process.
17. Give a detailed note on generative and non-generative patterns.
18. How to develop a effective documentation in detail.
19. Explain User interface layer in detail.
20. Explain in detail about architectural models from real world problems.

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**ASSIGNMENT-2**

**SUBMISSION- DATE: 26-04-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. Define ASP.NET.
2. What are the different types of hotspots?
3. Define Crystal Reports.
4. What are the Types of State Management?
5. Define Page Execution Life Cycle.
6. Differentiate Server Side and Client Side controls.
7. What do you mean by SOAP?
8. Define Web Parts.
9. Features of Login controls?
10. Define Catching.

**PART- B**

**ANSWER ALL THE QUESTIONS**

- 11(a).What are the Strategies involved in establishing remote connections. Explain  
(b). Explain about Components of Remote Computation System.
- 12(a).Describe about Form View Control and its properties.  
(b). what are the key aspects of Detail View Control?
- 13(a). Explain Site Navigation with example.  
(b). Describe Multi View controls and its properties.
- 14(a).Features of Website Development. Explain  
(b).Explain Creating Crystal Reports.
- 15(a).Detail about RPC in SOAP.  
(b). Briefly explain Accessing a web services through an ASP.NET application.

**PART- C**

**ANSWER ALL THE QUESTIONS**

16. Describe Grid View and Detail View with suitable example.
17. Explain Master Pages with its Properties and events.
18. Detail about Mobile Application Development in ASP.NET.
19. Describe about SOAP.
20. Briefly explain REST Architecture.

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**HUMAN COMPUTER INTERACTION (P16CSE1C)**

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**ASSIGNMENT-2**

**SUBMISSION- DATE: 28-04-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. What is meant by object persistence?
2. Define consumer-producer relationship.
3. What is use-case modeling?
4. Why is CBD important?
5. Write the strength of OMT.
6. Define package.
7. What is constraints?.
8. Define model dependency.
9. What is the purpose of analysis?
10. What is structural model?

**PART-B**

**ANSWER ALL THE QUESTIONS**

- 11a) Explain about object oriented system development methodology.  
b) Describe about object oriented approach.
- 12a) Explain component based development in detail  
b) Briefly describe the Booch system development process.
- 13a) Draw the state chart diagram and explain it  
b) Explain in detail about Use case model.
- 14a) Describe about classification.  
b) Discuss about corollaries.
- 15a) Write short note on Database models.  
b) Explain CORBA, ORBs and DCOM.

**PART-C**

**ANSWER ALL THE QUESTIONS**

16. Discuss about the layered approach to software development.
17. Explain in detail about Implementation diagram.
18. List the approaches for identifying class and explain each.
19. Describe the process of creating the access layer classes.
20. Explain in detail about Behavioral modeling.



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**Embedded Systems (P16CSE2A)**

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**ASSIGNMENT-2**

**SUBMISSION- DATE:30-04-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. Enumerate the characteristics of embedded systems.
2. Draw the memory selection design table for automatic washing machine.
3. Define device driver.
4. Mention the uses of queue in a program element.
5. How does data flow graph help in software designing process?
6. Mention the difficulties in modeling processing of instruction in a multiprocessor system.
7. Name the two different modes of an operating system.
8. Enumerate the three performance metrics for scheduling models.
9. Name the four main approaches to edit-test-debug cycle.
10. Give any two examples for memory sensitive programs.

**PART-B**

**ANSWER ALL THE QUESTIONS**

11. (a) Briefly explain about I/O prots, buses and interrupt handlers that are embedded in a system.  
(b) Briefly explain various types and uses of RAM and ROM for designing embedded systems.
12. (a) Briefly explain various sources of interrupts.  
(b) Explain how optimization of codes in embedded C++ can be done.
13. (a) Explain how control data flow graph is used to model a program.  
(b) Explain how graphs can be used to model partitioning and scheduling the multiprocessor systems.
14. (a) Briefly explain the typical components of an I/O subsystem.  
(b) Explain round-robin time slicing scheduling in RTOS with an example.
15. (a) Explain the role of target system in the design process of an embedded system.  
(b) Describe various issues in hardware and software design and co-design.

**PART-C**

**ANSWER ALL THE QUESTIONS**

16. Explain various structural units of a processor in an embedded system with a neat diagram.
17. Explain interrupt servicing mechanism in detail.
18. Explain the state machine programming models for event controlled program flow.
19. Explain in detail the interrupt handling in RTOS environment.
20. Explain the basic system of an automatic chocolate vending machine.

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**OOAD AND UML (P16CS21)**

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**ASSIGNMENT-3**

**SUBMISSION- DATE: 02-05-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. What is meant by object persistence?
2. Define consumer-producer relationship.
3. What is use-case modeling?
4. Why is CBD important?
5. Write the strength of OMT.
6. Define package.
7. What is constraints?.
8. Define model dependency.
9. What is the purpose of analysis?
10. What is structural model?

**PART-B**

**ANSWER ALL THE QUESTIONS**

- 11a) Explain about object oriented system development methodology.  
b) Describe about object oriented approach.
- 12a) Explain component based development in detail  
b) Briefly describe the Booch system development process.
- 13a) Draw the state chart diagram and explain it  
b) Explain in detail about Use case model.
- 14a) Describe about classification.  
b) Discuss about corollaries.
- 15a) Write short note on Database models.  
b) Explain CORBA, ORBs and DCOM.

**PART-C**

**ANSWER ALL THE QUESTIONS**

16. Discuss about the layered approach to software development.
17. Explain in detail about Implementation diagram.
18. List the approaches for identifying class and explain each.
19. Describe the process of creating the access layer classes.
20. Explain in detail about Behavioral modeling.

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**ASSIGNMENT-3**

**SUBMISSION- DATE: 04-05-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. Define Namespace.
2. What are the goals of distributed System?
3. Define RCS.
4. What is Failure Handling?
5. Define Formatters.
6. What is Remote Method Invocation?
7. What is Tree View Control?
8. Define Catalog Parts.
9. Features of Login controls?
10. Define Multiview Control.

**PART- B**

**ANSWER ALL THE QUESTIONS**

- 11.a)What are the challengers involved in establishing remote connections. Explain  
b). Explain about Remote Computation System and its components.
- 12a).Describe about implementation of Crystal Reports.  
b). Different types of ASP.NET pages and its features.
- 13a). Explain about Architecture of ASP.NET.  
b). Describe about Multiview controls and its properties.
- 14a). Detail about Menu Controls with its example.  
b).Explain Login Control and its properties.
- 15a).Detail about features of Website Development.  
b). Briefly explain WSDL.

**PART- C**

**ANSWER ALL THE QUESTIONS**

16. Explain State Management in ASP.NET.
17. Explain Seven Controls of ASP.NET.
18. Detail about Mobile Application Development in ASP.NET.
19. Describe about UDDI.
20. Briefly Simple Object Access Protocol with example.

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**HUMAN COMPUTER INTERACTION (P16CSE1C)**

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**ASSIGNMENT-3**

**SUBMISSION- DATE:06-05-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. Define HCI Ergonomics.
2. What is meant by Paradigm?
3. Define Scenarios.
4. Write a note on Screen design.
5. Define HCI patterns.
6. Write a note on toolkits.
7. What is the role of universal design principles?
8. Define diversity.
9. What is the role of user support?
10. Define Adaptive Help Systems.

**PART – B**

**ANSWER ALL THE QUESTIONS**

11. (a) Explain the underlying concepts of Interactivity.  
(b) State the necessary context of the interactions.
12. (a) Narrate the basic concepts of Navigation Design.  
(b) Enumerate the contents of Software Life Cycle.
13. (a) State the several guidelines for designing.  
(b) Enumerate the various Golden rules and Heuristics.
14. (a) How do you choose an evaluation method? Explain  
(b) Narrate the underlying concepts of designing for diversity?
15. (a) Write the underlying concepts of user support system.  
(b) Elucidate the significances of Adaptive Help Systems.

**PART – C**

**ANSWER ALL THE QUESTIONS**

16. Discuss the essential paradigms for interaction.
17. Write an essay on Interactive Design and Prototyping.
18. Discuss about User Interface Management Systems.
19. Write an essay on Universal Design.
20. List out the various implementation issues in user support.

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**ASSIGNMENT-3**

**SUBMISSION- DATE:08-05-2020**  
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**PART- A**

**ANSWER ALL THE QUESTIONS**

1. What are the constraints of an embedded system.
2. Name the classification of all interrupts as non-maskable and maskable interrupts.
3. What is real time clock give example?
4. Enumerate the concepts of virtual device drivers.
5. Note the advantages of embedded programming in C++.
6. Distinguish between function, ISR and Task.
7. Note the applications of the semaphore and shared data problem.
8. Define: Interprocess communications
9. write about the development process of an embedded system
10. What are the skills required for an embedded system designer.

**PART-B**

**ANSWER ALL THE QUESTIONS**

11. (a) Describe the uses of timing device in embedded systems and states in a timer.  
(b) Explain the concept of networked embedded system.
12. (a) Write about the wireless and mobile system protocols.  
(b) Briefly explain about interrupt servicing mechanism.
13. (a) Write a note on FSM Model.  
(b) Explain the UML Basic Elements and UML Diagrams.
14. (a) Explain the characteristics of the Function, ISR and Task.  
(b) Explain about the model for critical section service by a preemptive scheduler with a neat diagram.
15. (a) Note the basic design using an RTOS.  
(b) Note the software modules and tools for implementation of an embedded system.

**PART-C**

**ANSWER ALL THE QUESTIONS**

16. Explain the sophisticated interfacing features in device ports.
17. Explain the file system organization and implementation.
18. Write about the methods to saving of memory and power.
19. Write about preemptive scheduling model.
20. Explain the issues in hardware-software design and co-design.