V.S.B. COLLEGE OF ENGINEERING TECHNICAL CAMPUS, COIMBATORE

Academic Year: 2017-2018 (Even Semester) Department of Computer Science and Engineering Question Bank (2013 Regulations)

Multi-core Architecture
Question Bank
2 Marks and 16 Marks

UNIT-1

1. Difference between Symmetric Memory Architecture and Distributed Memory Architecture.

2. What is vector Instruction?
3. What are the factors to increasing the operating frequency of the processor?
4. Comparison between single and multi core CPU.
5. Define SIMD
6. Define MIMD
7. What is NUMA with neat sketch?
8. Define interconnection networks and its types.
9. What is Toroidal mesh?
10. Define Latency and Bandwidth.
11. Define Cache Coherence Protocol with its types.
12. What is called Directory based?
13. Define snooping.
14. What are the characteristic of the performance due to write update and write invalidate protocols?
15. What are the disadvantages of Symmetric Shared Memory architecture?
16. Define Agglomeration or aggregation.
17. What are the issues available in handling the Performance?
18. Define False Sharing.
19. Write a mathematical formula for speedup and efficiency of parallel program speed up.
20. What are the steps involved in designing and building parallel program?
21. What is single core Processor?
22. What is multi core processor?

UNIT-2

1. Why Algorithmic Complexity is important?
2. What is called Out-of-order in detail?
3. Define Hardware prefetching.hat
4. Define Software prefetching.
5. Define work Imbalance.
6. Define hot or contended locks.
7. Define Oversubscription
8. What are the processes of priority Inversion?
9. Define Data races.
10. Define Synchronization.
11. Define region of code.
12. Define Deadlock.

13. Define live lock.
14. Define Condition Variable
15. Define Signals and Events.
16. Define Message queue.
17. Define Named pipes.
18. What are the two common metrics for performance?
19. Define Algorithm complexity.
20. How structure impacts performance?.
21. What is spin locks?
22. Define Semaphores.
23. Define barriers.
24. How the threads are communicate with each other?

UNIT-3

1. What is termed as initial task region?
2. List the effect of cancel construct.
3. When will a cancellation point construct triggers?
4. Define the term thread private memory.
5. Differentiate shared memory model and message passing model.
6. Write short note on private variable.
7. Brief about flush – set.
8. How to enable consistency between two threads temporary view and memory?
9. List the criteria for sentinel of conditional complication.
10. What are the ICVs stored values affect loop regions?
11. What are the ICVs stored values affect program execution?
12. List the restrictions to array.
13. List the restrictions to parallel construct.
14. List the restrictions to work sharing construct.
15. List the restrictions to sections construct.
16. Brief about simple lock routines.
17. Brief about Nestable lock requires.
18. Brief about pragma.
19. Define the term shared variable in execution context..
20. Define the term private variable in execute context.
21. How does the run time system know how many threads to create?

UNIT-4

1. Define the term MPI
2. Brief the term collective communications.
3. What is the purpose of wrapper script?
4. How to compile and execute a MPI_hello.c program in MPI environment?
5. What are the functions in MPI to initiate and terminate a computation, identify processes and send and receive message?
6. What are the different data type constructors?

7. Brief about communicator in MPI.
8. How to remove a group?
9. List the dimension of the array in distributed array.
10. How to create a Cartesian Constructor?
11. What are the interfaces to create a distributed graph topology?
12. What are the features of blocking and non-blocking in point-to-point communication?
13. List some predefined reduction operators in MPI.
14. Brief about MPI_ALL_reduce and their representations.
15. Define the term broadcast in collective communication.
16. List the functions of Group Accessors.
17. How to represent any collection of data items in MPI?
18. How will calculate elapsed time in MPI?
19. Define the term linear speedup.
20. Brief about strongly and weakly scalable.

UNIT- 5
1. What are the input and output parameters of n-body problem?
2. Brief about reduced algorithm
3. Brief about Pthread's Loop_scedule functionality in parallel processing.
4. What are the difficult data structures can be adopted in a process?
5. What are the two phases for computation of forces?
6. Define the term ring pass.
7. What is graph?
8. What is directed graph of digraph?
9. Why diagraph is used in Travelling Salesperson Problem?
10. How to find a least cost tour in TSP?
11. How the function Push_copy is used in TSP?
12. What are the global variables for Recursive depth first search?
13. Define the term Pthreads or POSIX Threads.
14. What are the different categories of pthread?
15. What are the reasons for parameter threads_in_cond_wait used in Tree search?
16. What are the modes of message passing interaces for send and its functions?
17. Brief about MY_avail_tour_count functions.
18. Brief about pthread_mutex_trylock
19. Write about Fulfill_request functions.
20. Distinguish between MPI_Pack and MPI_Unpack?

16 Marks
UNIT-1

1. Explain in detailed about SIMD and MIMD systems
2. Explain briefly about interconnection networks.
3. Describe briefly on the performance issues of Multi – core Processors.
4. Describe the parallel program and explain in detail.
5. Discuss in detail about the cache coherence.

6. Explain briefly on Symmetric Memory Architecture and Distributed Memory Architecture..

UNIT-2
1. Discuss in detail about the performance in parallel application.
2. Briefly about the scalability in parallel application.
3. Explain in detail about data races and to overcome it.
4. Discuss in detail about the synchronization primitives.
5. Write in detail about conditional variables in communication between them.
6. Discuss in detail about communication between threads.

UNIT-3
1. Illustrate an OpenMP execution model with an example.
2. Explain the work-sharing constructs.
3. Explain in detail about General data parallelism.
4. Discuss in detail about Functional parallelism.
5. Explain in detail about the handling loops in parallel operations.
6. Illustrate the execution environment routines.
7. Explain briefly about internal control variables and array sections in directives.

UNIT-4
1. Illustrate an MPI program execution with an example.
2. Explain briefly about MPI Constructs of distributed memory.
3. Describe briefly about libraries for groups of processes and virtual topologies.
4. Explain the functioning of MPI_Send and MPI_Recv.
5. Draft an outline about the point-to-point communication with their functions.
6. Inscribe about the collective communication with their functions.

UNIT-5
1. Explain briefly about tree search using MPI and static partitioning.
2. Explain briefly about tree search using MPI and dynamic partitioning.
3. Explain in detail about Recursive and Non-recursive depth-first search with example.
4. Describe about parallelizing tree search using pthreads.
5. Discuss in detail about the performance of MPI Solvers.

CS 6008 HUMAN COMPUTER INTERACTION
PART A
UNIT I

1. What is meant by Human-computer interaction?
2. What are the benefits of good design?
3. What is meant by GUI?
4. Mention any 2 advantages of graphical system?
5. What are visually presented elements in a graphical system?
6. Define pick and click interaction?
7. Define Visualization.
8. What is an object and its types?
9. Define property/attribute specification and explain its sequence.
10. Define concurrent performance of functions.
11. What are the goals of web interface design?
12. What is meant by web interface design?
13. What are the similarities between GUI and web interface design?
14. Write any 2 differences between GUI and Webpage design.
15. Write any 2 differences between Printed page versus Web pages?
16. What is the communication channel between human and computer?
17. Mention any 2 difference between Intranet versus the Internet?
18. What is meant by transparency?
19. Define user interface? What are the components of user interface.
20 .What are the five ways to provide simplicity?

UNIT-II PART - A

1. What are the common pitfalls in the design process?
2. Define usability.
3. What are the common usability problems?
4. Identify human characteristics in design?
5. Differentiate between short-term and long-term memory.
6. What is meant by visual activity?
7. What are the direct methods in requirement analysis?
8. What are the indirect methods in requirement analysis?
9. Define mental model.
10. What are the guidelines for designing conceptual model?
11. What are goals of interface design?
12. What are the elements of screen?
13. What are the components of a statically graphic?
14. What are System Training tools?
15. What is test for a good design?
16. How to achieve clarity?
17. What are the qualities in visually pleasing composition?
18. What is known as Tabbing?
19. What is necessary for ordering?
20. Define pull down menu.

UNIT-III PART -A

1. Define window.
2. What is known as split box?
3. Define size grip?
4. What are the presentation styles of windows?
5. What are the advantages of Tiled windows?
6. What is known as cascading window?
7. What are the different features, of tiled & over lapping window?
8. What are the various types of windows?
9. Differentiate between cascading and unfolding.
10. What are the various window management schemes?
12. What is meant by windows project?
13. How window is organized?
14. What are the advantages of frames in web systems?
15. List some example for device based controls.
16. Differentiate the usage of keyboard with mouse?
17. What is meant by graphic tablet?
18. What is meant by spin box?
19. What is meant by slider?
20. Differentiate between tooltip from balloon tips.

UNIT-IV PART – A

l. What type of words used in effective communication?
2. What are the guidelines followed for sentence and message?
3. Define message? What are the types of messages?
4. What is meant by instructional message?
5. What is meant by response time?
6. What is the use of progress indicator?
7. What is known as ear cons?
8. Differentiate between slip and mistake?
9. What are the ways to prevent errors?
l0. What is meant by contextual Help?
ll. What is the purpose of hints?
l2. What is meant by internalization?
13. What is meant by localization?
l4. What is meant by Accessibility?
l5. What are the various types of disabilities?
16. What is meant by icon?
17. What are the various kinds of icon?
18. What is meant by dithering?
19. Mention the properties of a color.
20) What is known as protanopia, deuteranopia and tritanopia.

1. Differentiate control and section borders.
2. What are the principles of good screen design?
3. What is the purpose of usability testing?
4. What is meant by cognitive walk through?
5. What is meant by think-aloud evaluation?
6. Define focus group.
7. Define transition diagram.
8. What is importance of usability testing?
9. What is meant by prototype?
10. What are the various searches used in the multimedia document?
11. What are the features of user-interface building tools?
12. List some software tools used for user interface design.
13. What are the benefits of menu trees?
14. What are the ways to categorizing the web?
15. What are the various types of TTT?
16. What is the four phase framework to clarify user interfaces for textual search?
17. Define www.
18. Mention the types of prototypes.

CS6008 – HUMAN COMPUTER INTERACTION
PART B
UNIT 1

1. Explain in detail about human I/O Channels.(16)
2.Explain some of the computer application and their usage patterns. (16)
3. What are the data and functional requirements of I/O Channels?(16)
4. Explain briefly about reasoning and problem solving. (16)
5. Explain about the computer devices (8)
6. Explain about the processing and networks.(8)
7. Discuss briefly about Interaction-Models-frameworks. (16)
8. Write notes on(16)

UNIT II
1. Describe the architecture design and software process.(16)
2. Explain briefly about screen design.(16)
3. Explain briefly about Iteration and prototyping.(16)
4. Explain briefly about HCI in software process.(16)
5. What are the design and software process components? Write note on each of them. (16)
6. Describe in detail about the software life cycle.(16)

7. Describe in detail about prototyping in practice (16)
8. What are the design basic services? Explain each of them with necessary diagrams.
.(16) 9.(a) Write notes on design rules (8)
    (b) Write notes on principles (8)
10.(a) Write notes on evaluation techniques (8)

UNIT III

1. Explain the different levels of Cognitive models? (16)
2. Explain in details the Socio-Organizational issues and stake holder requirements?(16)
3. Explain the different types of Communication and collaboration models? (16)
4. Explain the virtualization of CPU, Memory and I/O devices? (16)
5. Explain the Hypertext, Multimedia and WWW? (16)

UNIT IV

1. Explain the Architecture of Mobile HCI with a neat diagram.(16)
2. Describe about the Mobile Ecosystem: Platforms, Application frameworks (16)
3. Describe about the Mobile services available in market.(16)
4. What are the types of Mobile Applications?(16)
5. Write notes on Mobile 2.0.(16)
6. Explain briefly about Mobile Information Architecture.(16)

UNIT V

1. Explain the web interface design in HCI with detail?(16)
2. Explain the designing interfaces architecture in detail?(16)
3. Explain in detail about direct selection?(16)
4. Explain the application of web interface in detail?(16)
5. Explain the Inlays and Virtual Pages in detail?(16)
6. Explain the process flow in detail?(16)

SOFTWARE PROJECT MANAGEMENT

QUESTION BANK

UNIT –I : PROJECT EVALUATION AND PROJECT PLANNING

PART A

1. What is a project?
2. What are the characteristics of a project?(Nov/Dec2011/Nov/Dec2012/NOV 2014/NOV 2015/ APRIL 2016)
3. What is the different software projects and other types of project?(May/June2012/APRIL 2016)
4. Define Contract Management.(May/Jun2013)(Apr2014).
5. What are the Technical Project Planning Methodologies
6. What are the three successive processes that bring a new system?(Nov/Dec2012)
7. Define Feasibility Study.
8. What is meant by planning?
9. What are the phases in software development life cycle?
10. Define Requirement Analysis.
11. What is meant by qualification testing?
12. What is the difference between Information systems and embedded
13. Differentiate Objectives Vs products.
14. What is management?
15. What are the activities of management?(Apr2014)
16. What are the problems with software project from manager's point of view?(May/Jun2013)
17. What are the problems with software project from student's point of view?(May/Jun2013)
18. What is meant by management control?
19. What are the steps involved in step wise planning?
20. How to identify project infrastructure?
21. How to manage activity risks?
22. Define project stake holders.(APRIL 2015)
23. How to review and publicize plan?
24. Define process. (Nov/Dec2011)
25. Define technical assessment.(may/Jun2013)
26. What are the steps in cost-benefit analysis?
27. Define development costs.
28. Define setup costs.
29. Define operational costs.
30. What is meant by cost flow forecasting?(Apr 2014)
31. What are the cost-benefit evaluation techniques?
32. Give the formula of payback period.
33. Define Decision tree.(may/Jun2013)
34. What is IRR? How is it calculated?(Nov/Dec2011)(May/Jun2012)
35. What is the significance of a "project risk matrix" ? give an example (may/Jun2012)

PART B

1. Explain the difference between software projects and other projects in detail.
2. Explain contract management and technical project management. (NOVEMBER 2014)
3. Explain activities covered by the software project management. (Nov/Dec2011/Nov/Dec2012 / May/Jun2013/Apr 2014/NOV 2014)

4. What is management? Explain the problems with software projects.(Nov/Dec2011)(Nov/Dec2012)
5. Explain stakeholders and business case.(NOV 2015/APRIL 2016)
6. Explain the step-wise project planning in detail. (Nov/Dec2011/may/Jun2012/Apr2014/ NOV2015/APRIL 2016)
7. How to analyze the project character tics?(may/Jun2012)
8. Explain the steps involved in to identify activity risks.
9. Explain the various SDLC activities as outlined by ISO 12207 with a neat diagram.(May/Jun2012 /APRIL 2015)
10. What are the steps involved in project evolution?(APRIL 2016)
11. Write in detail for project management with strategic assessment.(Nov/Dec2011/APRIL2016)
12. Explain cost-benefit evaluation techniques.(Nov/Dec2011/May/Jun2013/NOV 2014/Apr2014 / APRIL 2015/NOV 2015)
13. Explain risk evaluation. (Nov/Dec2011/May/Jun2012/ Nov/Dec2012/ Nov 2014/April 2015/April 2016)
14. What is meant by cash flow forecasting? Explain with example. (May/Jun2012/Nov/Dec2012/ Nov 2015/April 2016)

UNIT –II: PROJECT LIFE CYCLE AND EFFORT ESTIMATION

PART- A

1. What is Process?

2. What is Process modeling?

3. What is Product Life Cycle?

4. What are the phases in Product Life Cycle?

5. What is Rapid Application Development?

6. What is an Agile method?

7. Define Agile development.

8. Define SCRUM.

9. What are the benefits of SCRUM?

10. List the roles of SCRUM.

11. List out the SCRUM Meetings

12. List the outputs of cost estimation?

13. What is Cost Estimation Accuracy?

14. List out the methods of cost estimation.

15. Define COCOMO.

16. List the objectives of COCOMO II.

17. List the models in COCOMO II

18. List types of process models.

19. Define Waterfall Model.

20. List the advantages of Waterfall Model.

21. List the disadvantages of Waterfall Model.

22. When to use the waterfall model.

23. Define Agile Model.

24. Advantages of Agile model.

25. Disadvantages of Agile model.

PART-B

1. Explain rapid application development.

2. Illustrate Extreme Programming.

3. Explain Effort and cost estimation techniques.

5. Explain managing interactive Processes.

6. Explain COCOMO 2 parametric productivity model.

7. Illustrate staffing pattern.

UNIT-III: ACTIVITY PLANNING A N D R I S K M A N A G E M E N T

PART-A

1. What are the steps involved in Activity Planning?
2. What are the objectives of activity planning?(Nov/Dec2012)(May/Jun2013)
3. Define resource allocation.
4. How will define the activities?
5. What are the three different approaches to identifying the activities?
6. Write short notes on WBS.(Nov 2014/Nov 2015)
7. Mention the five levels of WBS.
8. How will formulate the network model?
9. What are the rules for constructing precedence networks?
10. Define Hammock activities.
11. What is meant by forward pass?
12. What is meant by backward pass?
13. What are the rules of activity –on-arrow rules and conventions?(Nov/Dec2011)
14. Define Risk.(Nov/Dec2011)
15. What are the risks to business impact?(Apr 2016)
16. What are things to be considered in risk management?(Nov/Dec2012)
17. Define Risk Identification.
18. Define risk analysis and risk monitoring.
19. Define Risk Planning.
20. What are the steps in risk planning?
21. Define risk assessment.
22. Define Hazard analysis.
23. What are called "Free floats "and "interfering floats" ? how are
    they calculated?(May/Jun2012/ Apr 2016)
24. What is a "Dangle" in an activity Network? show an example?(May Jun/2012)

PART-B

1. What are the objectives of activity planning?
2. Explain the approaches for identifying the activities.(Nov 2014)
3. Explain in detail formulating a network model.(May/Jun2012/Nov/Dec2012/ Nov 2015)
4. What is the difference forward pass and backward pass explain with example.(Nov 2014 / Apr 2015)
5. Explain activity-on-arrow networks. (May/Jun2013/Apr 2015)
6. What are the approaches in risk identification?(Apr 2015)
7. Explain the risk planning.(May/Jun2012/Nov/Dec2012/Nov 2015/Apr 2014)
8. How to evaluate the pert techniques.(Nov/Dec2011/Apr2014/Nov 2015/Apr 2016)
9. Explain with an example how critical path can be identified in precedence
    networks?(Nov/Dec2011)(May/Jun2013)

UNIT – IV: PROJECT MANGEMENT AND CONTROL

PART-A

1. Write notes on monitoring and control.(Apr2014)
2. What are the three steps in project control?(May/Jun2013/Nov 2015)
3. What are the functions in traffic light-method?
4. Define Gantt Chart
5. Define slip chart.(Nov 2014)
6. Write short notes on Earned Value Analysis.(Nov/Dec2011)
7. Define Scheduled variance.
8. What are the Deciding levels of monitoring?(May/Jun2013)
9. What are the steps in change control procedures?(Apr2014)
10. Define managing contracts.
11. What are the different types of contract?
12. What is meant by fixed price contracts?
13. Mention the advantages and disadvantages of fixed price contracts.
14. Define time and materials contracts.(Nov 2014)
15. What are the advantages and disadvantages are time and materials contracts?
16. Define fixed per unit delivered contracts.
17. What the advantages and disadvantages are of fixed per unit delivered contracts?
18. What are the processes of evaluation need?
19. What are the services to be provided in contracts?
20. Write any two advantages of function point analysis(Nov/Dec2011)
21. List the important roles of the configuration librarian (May/Jun2012).
22. Name the popular visual tools used for monitoring and tracking the project progress. (May/Jun2012).

PART-B

1. Explain project control cycle in detail.
2. Explain the method Earned value Analysis.(Nov/Dec2011/Apr2014/Nov 2014/Apr 2015/Apr 2016)
3. Explain the change in control procedures.(Nov/Dec2011/May/Jun2012/Nov 2014)
4. Explain the different types of contract in detail.(May/Jun2012/May/Jun2013/Apr2014)
5. Explain fixed price contracts with advantages and disadvantages.(May/Jun2012)
6. Explain time and material contract with advantages and disadvantages
7. What are the stages in contract management?(Nov/Dec2011/May 2013/Apr2014/Nov2015/ Apr 2016)
8. Explain Fixed price per deliver unit with advantages and disadvantages
9. Describe the various ways in visualizing the progress of the project.(Nov/Dec2012/may/Jun2013 / Apr 2015)
10. Explain the process of prioritizing monitoring. Give example.(Nov/Dec2012)(may/Jun2013)

UNIT – V: STAFFING IN SOFTWARE PROJECTS

PART-A

1. What are the objectives of managing people and organizing teams?(Apr2014)
2. What are the three basic objectives of organizational behavior.(Apr2014)
3. What are the factors consider in X theory?(May/June2013)
4. What are the factors consider in Y theory?
5. Define Motivation.
6. What are the needs in maslow's hierarchy theory?(May/Jun2012/Apr 2015)
7. Write short notes on herzberg's motivation-hygiene theory.(Nov 2014)
8. What are the factors to be considered in the Oldham-hackman job characteristic model?
9. Mention the methods of improving motivation.
10. How to becoming a team?
11. Define Forming.
12. Define team worker.
13. What are the two categorized for Decision making?
14. Mention some mental obstacles to good Decision making.(May/Jun2013)
15. What are the measures to reduce the disadvantages of group Decision making?
16. Define Leadership.
17. What are the functions of leader?
18. What are the leadership models/theories?
19. What are the leadership styles?
20. Define Stress.(Nov/Dec2011/Nov/Dec2012/Apr2015)
21. Define Departmentation.
22. What do you understand by "Egoless Programming".(May/Jun2012)/Nov 2015)
23. What is bespoke system.(Nov/Dec2012)
24. What is the use of checkpoints in monitoring.(Nov/Dec2012/Apr 2016)

PART-B

1. Explain the stepwise framework where staffing concerns are important.
2. Explain X theory and Y –theory. In detail.
3. Explain the recruitment process.(Nov/Dec2011/Nov/Dec2012/May/June2013/Apr2014)
4. Define motivation. Explain Maslow's hierarchy of needs.(Apr 2015/Apr 2016)
5. Explain the expectancy theory of motivation.
6. What the methods involved in motivation?(Nov/Dec2011/May/Jun2013/Nov 2014)
7. What are the steps needed to become a team?(Nov/Dec2012/Apr 2015)
8. Explain the leadership style in detail.(Nov/Dec2011/Apr 2015)
9. Explain the organizational structures.(May/Jun2012)(Nov/Dec2012)
   (May/Jun2013/Nov 2014/ Apr 2016)
10. Oldham-hack man job characteristic model.(May/Jun2012/Nov 2014/Apr 2015/Nov 2015)
11. Stress and its significance in IT Projects.(May/Jun2012/Nov 2015)
12. Explain the different ways of Decision making.
    (Nov/Dec2012/May/Jun2013/Apr2014/ Apr 2016)