

[Time: 3 Hours]

[Total marks:80]

PS 1) Question No. 1 is Compulsory.

- 2) Attempt any three questions out of remaining.
- 3) Assume suitable data if necessary.

Q1. a) Explain the need for Security. Describe the basic Information Security Model. [10]

b) Explain the different forms of Assets with examples. [5]

c) Briefly explain vulnerability, threat and attacks. [5]

Q2. a) Explain Quantitative and Qualitative Risk-Assessment Approaches with suitable examples. [10]

b) Explain the role of configuration management in security of an organization. Give the configuration management framework. [10]

Q3. a) Explain scanning and analysis tools for network assessment along with their working principle. [10]

b) What are the final report preparation steps and post assessment activities in performing network assessment. [10]

Q4. a) What are certificates? What are certificate authorities? What services do they provide? [10]

b) what does testing of web services involve? How can you identify web servers? [10]

Q5. a) Briefly explain ICMP probing. What are the tools used for that? [10]

b) Explain what is Information planning and Governance. What are Information policy standards? [10]

Q6. a) Explain the role of the Audit Committee and how it helps the Organization. What is the need for conducting Audit? [10]

b) Explain IT risk Management framework. Explain the ISO 27000 series. [10]



(Time: 3 Hours)

[Total Marks: 80]

NOTE: 1. Question No 1 is compulsory

2. Attempt any three questions from remaining.

3. Assume suitable data if necessary.

Q1 Attempt **any four**.

- a) Mention the levels of parallelism available in parallel processing approaches. (05)
- b) Differentiate between the SIMD and MIMD architecture. (05)
- c) Evaluate the 2-D mesh topology. (05)
- d) Discuss the term *collective communication* in MPI. (05)
- e) Explain the cache coherence problem. (05)

- Q2 a) Explain the Foster's design methodology and apply the same to any one sorting algorithm. (10)
- b) Explain the term Isoefficiency of Amdahl's law. (10)

- Q3 a) Derive the expression for speedup and efficiency by Amdahl's law and comment on the same. (10)
- b) Discuss the CUDA memory model neatly. (10)

- Q4 a) Write a small program demonstrating functional and compiler directives in OpenMP Paradigm and MPI Paradigm (10)
- b) Build and evaluate the Hyper tree network (Degree 4 depth 2) topology. (10)

- Q5 a) Explain the CPU+GPU architecture and its processing flow. (10)
- b) Differentiate between the buffered blocking and non-buffered blocking message passing operation in MPI. (10)

Q6 Attempt **any two**.

- a) Discuss PetaBricks and GraphChi in brief. (10)
- b) Discuss the fork and join model used by OpenMP. (10)
- c) Comment on communication and synchronization issues in parallel computing. (10)

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INFT

(3 Hours)

[Total Marks: 80]

NOTE: Question No 1 is compulsory  
Attempt any three questions from remaining.  
Assume suitable data if necessary.

- Q1. A) Explain in detail Responsive Web Design using HTML5 and CSS3 with an example. [10]  
B) Explain in detail JSON Mashup with neat diagram. [10]
- Q2. A) Explain in detail WS-Reliable Messaging? [10]  
B) Create a web page to show how you can apply the transformation effects so that the image rotates by 150 degree. Assume suitable parameters if required. [10]
- Q3. A) Explain in detail A/B testing and multivariate testing for testing websites. [10]  
B) Discuss in detail different website design issues. [10]
- Q4. A) Define DOM. Explain in detail Node tree for HTML Document. Also explain the different levels of DOM. [10]  
B) Explain in detail AJAX web application model with neat diagram. [10]
- Q5. A) Explain in detail the semantic web stack. [10]  
B) Comparison between Open Source Frameworks of Django, Drupal and Joomla? [10]
- Q6. Write short notes. [20]  
a) RDFS  
b) SOAP  
c) REST-ful web services  
d) Web Service Architecture



Choice Based

(3 hours)

Total 80

First Question is compulsory and attempts any three questions among remaining.

Q1

- a) Explain the PEAS representation with example -10-  
b) Explain Model based reflex agents and goal based agents -10-

Q3

- a) Explain A \* algorithm with example -10-  
b) Explain Depth First Iterative deepening (DFID) -10-

Q3

- a) Explain Stock price prediction using suitable model for learning, training and testing. -10-  
b) What is propositional Logic? Compare Forward and backward chaining algorithm. -10-

Q4

- a) Explain the Support Vector Machine as deterministic model. -10-  
b). Single Layer Feed Forward algorithm. -10-

Q5.

- A) Explain back propagation algorithm. -10-  
b). Explain Hill Climbing algorithm with application. -10-

Q6.

- Write short note on -20-  
a. Reinforcement Learning  
b. HMM

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based / EXTC / INFT / INST & CONT.

(Three Hours)

Total Marks: 80

Instructions:

- Attempt any four questions out of six questions
- Assume suitable data wherever necessary
- Figures to the right indicate full marks.

- Q.1 Answer any Four. 20
- Role of SPSS in data analysis
  - Foot notes and Bibliography
  - Importance of t-tests
  - Descriptive statistics
  - Testing of hypothesis
  - Non-parametric tests
- Q.2 a. What is the research methodology? Explain the steps in scientific research process. 10  
Briefly explain about literature review.
- b. State the sources of research problem. How a problem is identified? Enumerate the criteria for the selection of a problem. 10
- Q.3 a. Explain the concept of attitude scale. Explain the Likert's scale to measure data attitude. 10
- b. Explain Quantitative vs. Qualitative type of research. Explain Post Facto research and Motivation in research. 10
- Q.4 a. Explain critically interpretation and Organization of the data. 10
- b. Hypothesis is a statement which involves a relationship of variable. Enumerate the types of variables included in stating a hypothesis. 10
- Q.5 a. What are the characteristics of research? What are the factors affecting research design? 10
- b. "A systematic bias results from errors in the sampling procedures". What do you mean by such a systematic bias? Describe the important causes responsible for such a bias. 10
- Q.6 a. What are the differences between observation and interviewing as methods of data collection? Explain with two specific examples of situations where either observation or interviewing would be more appropriate. 10
- b. You have been asked to research setting up of a roadside hotel. Design a questionnaire to find out the prospects of proceeding with the venture. 10

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