Q.P.Code: 017012

[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 Isoeffciency 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)

(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 prepositional 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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(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
