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15CS71

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021
Web Technology and its Applications

Time: 3 hrs. Max. Marks: 80

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. What is HTML? Explain the structure of HTML documents. (06 Marks)
b. Explain the following HTML elements with example : i) images ii) list. (04 Marks)
c. Write the division based HTML semantic structure elements. (06 Marks)

OR

2 a. Define CSS. Explain the location of styles. (08 Marks)
b. Illustrate the CSS Box model besuge to label each of the components of the box. (04 Marks)
c. What are class sectors and id selectors? (04 Marks)

Module-2

3 a. Explain the basic table structure. Create an HTML document for the Fig.Q3(a). (06 Marks)

Fig.Q3(a)

ONE	TWO	
	THREE	FOUR

b. With the sample HTML form, explain how forms work. (06 Marks)
c. List the various form-related HTML elements. (04 Marks)

OR

4 a. Explain positioning elements in CSS. (08 Marks)
b. What is responsive design? Explain the four key components that make responsive design work. (08 Marks)

Module-3

5 a. What is Javascript? Explain the advantages and disadvantages of client side scripting. (04 Marks)
b. How Javascript can be linked to an HTML. (04 Marks)
c. Briefly describe the document Object Model. (08 Marks)

OR

6 a. What are javascript events? Explain Event Handler approaches and Even Types. (08 Marks)
b. Define PHP? Explain the PHP quote usage and concatenation approaches. (08 Marks)

Module-4

7 a. Define Array. Briefly explain the array operations in PHP with example. (06 Marks)
b. Illustrate how data will flow from HTML form to PHP $_GET and $_POST array. (06 Marks)
c. Write a note on $_SERVER Array. (04 Marks)

OR

8 a. Define class. Describe the accessibility of a class member. (06 Marks)
b. Explain three main error reporting flags. (06 Marks)
c. Write a note on PHP error and exception handling. (04 Marks)

Module-5

9 a. What are cookies? Explain how it works. (08 Marks)
b. What is caching? Explain two basic strategies of caching web application. (08 Marks)

OR

10 a. Write a note on Arynchronous file transformation. (04 Marks)
b. What is XML? Write the syntax rule for XML. (04 Marks)
c. Describe how XML processing in PHP and Javascript. (08 Marks)

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15CS72

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021
Advanced Computer Architectures

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Describe with a neat diagram different shared memory multiprocessor models. **(09 Marks)**

b. A 400 MHz processor was used to execute a program with the following instruction mix and clock cycle counts:

Instruction Type	Instruction Count	Clock Cycle Count
Integer Arithmetic	450000	1
Data Transfer	320000	2
Floating Point	150000	2
Control Transfer	80000	2

Determine the effective CPI, MIPS rate and execution time for this program. **(07 Marks)**

OR

2 a. Explain the different types of data dependences. Draw the dependence graph for the following code segment:

S_1 : Load R_1, A /$R_1 \leftarrow$ Memory (A)/
S_2 : Add R_2, R_1 /$R_2 \leftarrow (R_1) + (R_2)$/
S_3 : Move R_1, R_3 /$R_1 \leftarrow (R_3)$/
S_4 : Store B, R_1 /Memory(B) $\leftarrow (R_1)$/ **(08 Marks)**

b. List the different types of static connection networks and explain any three in detail. **(08 Marks)**

Module-2

3 a. Differentiate between CISC and RISC architecture. **(06 Marks)**

b. Explain in detail Inclusion, coherence and Locality properties. **(10 Marks)**

OR

4 a. Explain with a neat diagram Hierarchical Memory Technology. **(08 Marks)**

b. Explain the architecture of VLIW processor and its pipeline operation. **(08 Marks)**

Module-3

5 a. What is arbitration? Describe central arbitration and distributed arbitration with relevant sketches. **(09 Marks)**

b. Explain direct mapping cache organization. Mention its advantages and disadvantages. **(07 Marks)**

OR

6 a. Consider the following reservation table for a three-stage pipeline.

	1	2	3	4	5	6	7	8
S_1	X					X		X
S_2		X		X				
S_3			X		X		X	

(i) What are the forbidden latencies and initial collision vector?
(ii) Draw the state transition diagram.
(iii) List all simple cycles and greedy cycles.
(iv) Determine MAL.
(v) Determine the pipeline throughput. **(10 Marks)**

b. List the different mechanisms for instruction pipelining. Explain any one in detail. **(06 Marks)**

Module-4

7 a. What is cache coherence problem? What are the different causes of cache inconsistencies? Explain n detail. **(10 Marks)**

b. Explain store and forward routing and wormhole routing related to message routing. **(06 Marks)**

OR

8 a. Describe with relevant sketches three types of cache directory protocols. **(10 Marks)**

b. Explain the context switching policies. **(06 Marks)**

Module-5

9 a. Explain synchronous message passing and asynchronous passing related to message passing model. **(08 Marks)**

b. Explain object oriented programming model. **(08 Marks)**

OR

10 a. Explain the concept of operand forwarding with suitable example. **(08 Marks)**

b. Describe in brief Tomasulo's algorithm. **(08 Marks)**

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15CS73

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021
Machine Learning

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Define machine learning. Explain with specific examples. **(06 Marks)**
b. How you will design a learning system? Explain with examples. **(06 Marks)**
c. List and explain perspectives and issues in Machine Learning. **(04 Marks)**

OR

2 a. Define concept learning. Explain the task of concept learning. **(06 Marks)**
b. How the concept learning can be viewed as the task of searching? Explain. **(04 Marks)**
c. Explain with examples:
i) Find-S algorithm
ii) Candidate Elimination algorithm **(06 Marks)**

Module-2

3 a. Define decision tree learning. List and explain appropriate problems for decision tree learning. **(06 Marks)**
b. Explain the basic decision tree learning algorithm. **(05 Marks)**
c. Describe Hypothesis space search in decision tree learning. **(05 Marks)**

OR

4 a. Define inductive bias. Explain inductive bias in decision tree learning. **(06 Marks)**
b. Give the differences between the hypothesis space search in ID3 and candidate elimination algorithm. **(04 Marks)**
c. List and explain issues in decision tree learning. **(06 Marks)**

Module-3

5 a. Define Artificial neural networks. Explain biological learning systems. **(05 Marks)**
b. Explain representations of Neural network. **(05 Marks)**
c. Describe the characteristics of Back propagation algorithm. **(06 Marks)**

OR

6 a. Define Perceptron. Explain representational power of Perceptrons. **(05 Marks)**
b. Explain gradient descent algorithm. **(06 Marks)**
c. Describe derivation of the back propagation rule. **(05 Marks)**

Module-4

7 a. List and explain features of Bayesian learning methods. **(06 Marks)**
b. Describe Brute-Force map learning algorithm. **(05 Marks)**
c. Explain maximum likelihood and least-squared error hypothesis. **(05 Marks)**

OR

8 a. Describe maximum likelihood hypotheses for predicting probabilities. **(05 Marks)**

b. Define Bayesian belief networks. Explain with an example. **(06 Marks)**

c. Explain EM algorithm. **(05 Marks)**

Module-5

9 a. Define the following with examples:
i) Sample error ii) True error iii) Mean iv) Variance. **(08 Marks)**

b. Explain central limit Theorem. **(04 Marks)**

c. Explain K-Nearest neighbor algorithm. **(04 Marks)**

OR

10 a. Explain case-based reasoning. **(06 Marks)**

b. List and explain important differences of reinforcement algorithm with other function approximation tasks. **(04 Marks)**

c. Explain Q Learning Algorithm. **(06 Marks)**

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15CS743

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021
Information and Network Security

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. List the four classic crypto. **(04 Marks)**

b. Explain any three classic crypto cipher in brief. **(12 Marks)**

OR

2 a. Write the basic terminology of crypto, with neat diagram, indicating crypto as a Black box. **(08 Marks)**

b. List any three cipher and explain the following cipher in brief: (i) Cipher of election of 1876 (ii) Codebook Cipher (iii) Modern Crypto History **(08 Marks)**

Module-2

3 a. Explain in brief: (i) Birthday problem (ii) Birthday attack **(08 Marks)**

b. Explain in brief: (i) Non-cryptographic hashes (ii) HMAC **(08 Marks)**

OR

4 a. Explain in brief the Tiger hash. **(08 Marks)**

b. Explain in brief in the sense of uses for hash function: (i) Online bids (ii) Spam reduction **(08 Marks)**

Module-3

5 a. Explain with example diagram of dynamic password scheme. **(08 Marks)**

b. Explain the zero knowledge mechanism with diagram. **(08 Marks)**

OR

6 a. List and explain the AKE protocol goals. **(08 Marks)**

b. List the stages of protocol design and explain in brief. **(08 Marks)**

Module-4

7 a. Explain in brief the key life cycle with neat diagram. **(08 Marks)**

b. List and explain in brief the reasons why cryptographic keys have finite life times. **(08 Marks)**

OR

8 a. Explain the following in brief with respect to governing key management:
(i) Key management policies, practices and procedures
(ii) Key generation ceremony **(08 Marks)**

b. Explain in brief with diagram, 3-level key hierarchy and list the two advantages of deploying keys in a hierarchy. **(08 Marks)**

Module-5

9 a. Explain in brief the SSL key management. **(08 Marks)**

b. List and explain in brief the SSL design issues. **(08 Marks)**

OR

10 a. List and explain in brief the WEP Confidentiality and Integrity Weakness. **(08 Marks)**

b. List the four design issues emerging from the study of GSM and UMTS and explain each in brief. **(08 Marks)**

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15CS754

Seventh Semester B.E. Degree Examination, Jan./Feb.2021
Storage Area Networks

Time: 3 hrs. Max. Marks: 80

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. Explain evolution of storage architecture with neat diagram. **(08 Marks)**
b. Discuss the key characteristics of a data centre, with neat diagram. **(08 Marks)**

OR

2 a. What is protocol? Explain the popular interface protocols used for host to storage communications. **(08 Marks)**
b. Explain two different types of intelligent storage systems. **(08 Marks)**

Module-2

3 a. Explain Fibre channel protocol stack with neat diagram. **(08 Marks)**
b. What is zoning? Explain its types. **(08 Marks)**

OR

4 a. What is FCIP? Explain FCIP protocol stack. **(08 Marks)**
b. What is NAS? Explain its components with neat sketch. **(08 Marks)**

Module-3

5 a. Explain any two backup topologies with neat diagram. **(08 Marks)**
b. Discuss Data Deduplication implementations. **(08 Marks)**

OR

6 a. Give different uses of local replicas. **(08 Marks)**
b. Explain remote replication technologies. **(08 Marks)**

Module-4

7 a. What is cloud computing? Give its characteristics. **(08 Marks)**
b. Explain different cloud service models. **(08 Marks)**

OR

8 a. Explain various cloud deployment models. **(08 Marks)**
b. Discuss cloud challenges. **(08 Marks)**

Module-5

9 a. Explain storage security domains. **(08 Marks)**
b. Explain various security measures of cloud environment. **(08 Marks)**

OR

10 a. Explain various storage infrastructure management activities. **(08 Marks)**
b. Explain information lifecycle management. **(08 Marks)**

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