USN | | | | | | | | | | **15CS71**

Seventh Semester B.E. Degree Examination, Aug./Sept.2020
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.	With example explain HTML syntax.
	b.	Discuss the structure of HTML documents.
	c.	Explain any six html elements.

(04 Marks)
(06 Marks)
(06 Marks)

OR

2	a.	What is CSS? Explain the benefits of CSS.
	b.	With example explain the location of styles.
	c.	Explain any two selectors with respect to CSS.

(06 Marks)
(06 Marks)
(04 Marks)

Module-2

3	a.	Discuss <table> element along with spanning rows and columns.
	b.	Explain the following concerned with forms:
		i) Form structure
		ii) Form control elements.

(08 Marks)

(08 Marks)

OR

4	a.	Explain the different ways of positioning elements in CSS layout technique.
	b.	Discuss fixed layout and liquid layout with example for each.

(08 Marks)
(08 Marks)

Module-3

5	a.	Bring out the features of java script and also explain client-side scripting.
	b.	Explain the following concerned with java script:
		i) Comparison operator
		ii) Logical operators
		iii) While loops.
	c.	Discuss arrays of java script.

(04 Marks)

(06 Marks)
(06 Marks)

OR

6	a.	With example PHP tags, PHP comments, data types and constants.
	b.	By giving syntax and example, explain if….else in PHP.
	c.	Explain functions in PHP.

(04 Marks)
(06 Marks)
(06 Marks)

Module-4

7	a.	Explain $_GET and $_POST hyperglobal arrays.
	b.	With syntax and example, explain PHP classes and objects.

(08 Marks)
(08 Marks)

OR

8 a. Explain the following with respect to PHP:
    i)   Data encapsulation
    ii) Inheritance
    iii) Polymorphism. (09 Marks)
  b. Discuss errors and exceptions of PHP. (05 Marks)

Module-5

9 a. What in a cookie? Explain. (04 Marks)
  b. Explain the following:
    i) Serialization
    ii) Session state. (06 Marks)
  c. Explain different types of caching used to improve performance of web applications.
    (06 Marks)

OR

10 a. Explain javascript pseudo-classes with examples. (08 Marks)
   b. What is AJAX? Explain AJAX request by writing UML diagram. (08 Marks)

* * * * *

CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐

15CS73

Seventh Semester B.E. Degree Examination, Aug./Sept.2020
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. What is Machine Learning? Explain different perspectives and issues in machine learning. **(06 Marks)**

   b. Explain the steps in designing a learning system. **(10 Marks)**

OR

2 a. Describe the Candidate-Elimination algorithm. Explain its working, taking the enjoy sport concept and training instances given below:

Example	Sky	Air Temp	Humidity	Wind	Water	Forecast	Enjoy sport
1	Sunny	Warm	Normal	Strong	Warm	Same	Yes
2	Sunny	Warm	High	Strong	Warm	Same	Yes
3	Rainy	Clod	High	Strong	Warm	Change	No
4	Sunny	Warm	High	Strong	Warm	Change	Yes

(10 Marks)

   b. Explain how to model inductive systems by their equivalent deductive systems for Candidate-Elimination Algorithm. **(06 Marks)**

Module-2

3 a. Explain the concepts of entropy and information gain. **(06 Marks)**

   b. Describe the ID3 algorithm for decision tree learning. **(10 Marks)**

OR

4 a. Apply ID3 algorithm for constructing decision tree for the following training example.

Day	Outlook	Temperature	Humidity	Wind	Play Tennis
D1	Sunny	Hot	High	Weak	No
D2	Sunny	Hot	High	Strong	No
D3	Overcast	Hot	High	Weak	Yes
D4	Rain	Mild	High	Weak	Yes
D5	Rain	Cool	Normal	Weak	Yes
D6	Rain	Cool	Normal	Strong	No
D7	Overcast	Cool	Normal	Strong	Yes
D8	Sunny	Mild	High	Weak	No
D9	Sunny	Cool	Normal	Weak	Yes
D10	Rain	Mild	Normal	Weak	Yes
D11	Sunny	Mild	Normal	Strong	Yes
D12	Overcast	Mild	High	Strong	Yes
D13	Overcast	Hot	Normal	Weak	Yes
D14	Rain	Mild	High	Strong	No

(10 Marks)

   b. Explain the issues in decision tree learning. **(06 Marks)**

Module-3

5 a. Explain appropriate problems for Neural Network Learning with its characteristics.

(10 Marks)

   b. Explain the single perceptron with its learning algorithm.

(06 Marks)

OR

6 a. Explain Back Propagation algorithm.

(10 Marks)

   b. Explain the remarks of Back propagation algorithm.

(06 Marks)

Module-4

7 a. Explain Naïve Bayes classifier.

(10 Marks)

   b. Explain Bayesian Belief Networks.

(06 Marks)

OR

8 a. Explain EM algorithm.

(08 Marks)

   b. Explain the derivation of K-means algorithm.

(08 Marks)

Module-5

9 a. Explain K-nearest neighbor learning algorithm with example.

(10 Marks)

   b. Explain case based reasoning with example.

(06 Marks)

OR

10 Write short note on:
   a. Q learning
   b. Radial basis function
   c. Locally weighted regression
   d. Sampling theory.

(16 Marks)

* * * * *

USN | | | | | | | | | | 15CS741

Seventh Semester B.E. Degree Examination, Aug./Sept. 2020
Natural Language Processing

Time: 3 hrs. Max. Marks: 80

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Use appropriate design wherever required to explain.

Module-1

1 a. Illustrate with suitable examples, the different levels of the natural language processing . **(08 Marks)**

   b. Classify the following sentences and check for semantic, correctness, syntactically correctness and pragmatic correctness. The sentence uttered by person is car is too cold. The following are the response to this sentence:
   (i) The heater is on.
   (ii) The tyre is brand new.
   (iii) The window is closed. **(08 Marks)**

OR

2 a. Differentiate between semantic level and pragmatic level of processing. Give suitable examples for each level. **(08 Marks)**

   b. Construct the parse tree for the following sentences:
   (i) Sue hit John.
   (ii) They are cooking Sambar.
   Also give top-down approach of grammar for the above sentences. **(08 Marks)**

Module-2

3 a. Explain different types of single error misspellings and the cares for it. **(08 Marks)**

   b. Give the equation for minimum edit distance algorithm and explain the same. Apply the algorithm on wordlength of 7 by showing the transition from "intention" to "execution". **(08 Marks)**

OR

4 a. Compare the probabilistic parsing with that of statistical parsing. **(08 Marks)**

   b. Differentiate between FST and FSA for an input. Provide examples for the same. **(08 Marks)**

Module-3

5 a. Construct a dependency graph for the sentences given below (ACE) :
   (i) Protesters, Ceized several pumping stations, holding 127 shell workers hostage.
   (ii) Troops recently have raided churches warning ministers to stop Preaching.
   Give the categories of word-word dependencies. Also give the shortest path representation of relations. **(12 Marks)**

   b. What is domain knowledge? How is it important in information extraction applications? **(04 Marks)**

OR

6 a. Give the equation of kernel extraction for finding common features between x and y. How is K(x, y) computed for location relationship for the sentence given below:

S_1 = his actions in Bombay

S_2 = his arrival in Delhi. **(08 Marks)**

   b. With the help of diagram, explain the learning frame work architecture. **(08 Marks)**

Module-4

7 a. Explain latent semantic analysis (LSA) feedback systems. **(08 Marks)**

   b. What is data preparation? Give the processes involved in abstraction over the input text. **(08 Marks)**

OR

8 a. Give the characterstics of Coh-matrix. Provide suitable examples to rate high and low cohesion. How is this different from text identification? **(08 Marks)**

   b. Elicit salient features of semantically guided text mining. **(08 Marks)**

Module-5

9 a. Explain PoS tagger in details? Provide suitable examples for PoS tagger. **(08 Marks)**

   b. Give the salient features of FrameNet Corpus. Provide details of how it is used in sematic labeling and analysis. **(08 Marks)**

OR

10 a. Present the design aspects of information retrieval systems. Use diagram wherever required. **(08 Marks)**

   b. How stemmer process is applied on corpus like FrameNet? Give the details of word in FrameNet. **(08 Marks)**

* * * * *

USN ☐☐☐☐☐☐☐☐☐☐   **15CS743**

Seventh Semester B.E. Degree Examination, Aug./Sept. 2020
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. Define the following terms :
       i) Cryptography   ii) Plaintext   iii) Ciphertext   iv) Encryption   v) Decryption. **(05 Marks)**
    b. Find the plaintext and the key from the ciphertext given that the cipher is a simple substitution of the shift – by – n variety.
       IRXUVFRUHDAGVHYHABHDUVDIR   **(05 Marks)**
    c. Encrypt the message attack at down using a double transposition cipher with 3 rows and 4 columns, using the row permutation $(1, 2, 3) \rightarrow (3, 2, 1)$ and the column permutation $(1, 2, 3, 4) \rightarrow (4, 2, 1, 3)$. **(06 Marks)**

OR

2   a. Using the following letter encodings

e	h	i	k	ℓ	r	s	t
000	001	010	011	100	101	110	111

   Encrypt the given plaintext "heilhitter" using the key "trsrtℓerse" with one time pad cipher. Discuss drawbacks of the time pad? **(08 Marks)**
    b. What is HASH function? Discuss the uses of hash functions. **(08 Marks)**

Module-2

3   a. Explain the detail the Tiger hash cryptographic function. **(08 Marks)**
    b. What is randomness briefly; discuss the approaches to generating randomness. **(08 Marks)**

OR

4   a. With a neat diagram, explain how passwords are protected in Unix operating systems. **(08 Marks)**
    b. What is freshness mechanism? Briefly discuss Nonce based freshness mechanism. **(08 Marks)**

Module-3

5   a. Discuss the need for cryptographic protocols in detail. **(08 Marks)**
    b. Discuss in detail the different stages in designing a cryptographic protocol. **(08 Marks)**

OR

6   a. What is dynamic password scheme? Illustrate with diagram how a user is authenticated in dynamic password scheme. **(08 Marks)**
    b. Describe the man – in – the – middle attack on the Diffie – Hellman protocol in detail. **(08 Marks)**

Module-4

7 a. With diagram, explain the different phases of key lifecycle. (08 Marks)
   b. Discuss the reasons why cryptographic keys have finite lifetimes. (08 Marks)

OR

8 a. Discuss the different public key certificate management models. (08 Marks)
   b. Briefly discuss the SSL security requirement and security issues. (08 Marks)

Module-5

9 a. Discuss the handshake and Record cryptographic protocol employed in SSL. (08 Marks)
   b. Briefly discuss the different attacks on WEP. (08 Marks)

OR

10 a. Briefly discuss the key management issues relating to cryptography in payment cards.
   (08 Marks)
   b. With diagram, discuss the eID card issuing process. (08 Marks)

* * * * *

USN | | | | | | | | | | |

15CS754

Seventh Semester B.E. Degree Examination, Aug./Sept.2020
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 the key characteristics of a data center, with a neat diagram. **(08 Marks)**
   b. With a neat diagram, explain the structure of read and write operations in cache. **(08 Marks)**

OR

2 a. List the different RAID levels where parity technique has been adopted. Explain any three. **(10 Marks)**
   b. Compare virtual and traditional storage provisioning. **(06 Marks)**

Module-2

3 a. What is zoning? What are the advantages of zoning? Explain the various types of zoning. **(08 Marks)**
   b. Write a note on iSCSI. **(08 Marks)**

OR

4 a. Explain the fibre channel Protocol stack with neat figure. **(08 Marks)**
   b. Explain I/O consolidation using FCoE. **(08 Marks)**

Module-3

5 a. Define the following terminologies:
      i) MTBF   ii) RPO   iii) MTTR   iv) RTO. **(08 Marks)**
   b. Describe the failure analysis in BC. Mention some important BC technology solutions. **(08 Marks)**

OR

6 a. Explain backup and restore operations with neat diagram. **(08 Marks)**
   b. Explain Backup in virtualized environments. **(08 Marks)**

Module-4

7 a. Define cloud computing. List and explain the essential characteristics of cloud computing. **(06 Marks)**
   b. Classify the deployment models in cloud computing. Explain any two. **(10 Marks)**

OR

8 a. List and explain the challenges facing in cloud-computing. **(06 Marks)**
   b. Explain cloud infrastructure layers, with diagram. **(10 Marks)**

Module-5

9 a. Write a note on: i) Risk triad   ii) Threats **(08 Marks)**
   b. Explain the concept of Kerberos with neat diagram. **(08 Marks)**

OR

10 a. Discuss the IPSAN security implementation in storage networking. **(06 Marks)**
    b. Explain the storage infrastructure management activities in detail with example. **(10 Marks)**

* * * * *