Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

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

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1 a. What are the 3 aims of HTML52

(04 Marks)

- b. Explain the need of cascade in CSS. Explain the 3 principles of cascade with suitable CSS script segments. (08 Marks)
- c. Explain two types of URL referencing techniques with suitable scripts in HTML5. (08 Marks)

OR

2 a. List and explain the different selectors available in CSS.

(08 Marks)

b. Discuss the HTML5 semantic structure elements.

(08 Marks)

c. List the different text properties with a description.

(04 Marks)

Module-2

3 a. Explain different form widgets created with the <input> tag.

(08 Marks)

b. Write HTML code for following table:

	SEN	MIENAR
SCHEI	DULE	TEOPIC
BEGIN	END	19°
8:00 am	5:00 pm	Introduction to XML
8.00 am	3.00 pm	Validity: DTD & NG
11:00 am	2:00 pm	XPAT4
11:00 am	2:00 pm -	A STATE OF THE STA
2:00 pm	5:00 pm	XSL transformations
8:00 am	5:00 pm	XSL Formatting Objects
	8:00 am 11:00 am 11:00 am 2:00 pm	SCHEDULE BEGIN END 8:00 am 5:00 pm 11:00 am 2:00 pm 11:00 am 2:00 pm 2:00 pm 5:00 pm

(12 Marks)

OR

- 4 a. Explain liquid layout design for websites with an example. List the fluid layout benefits and limitations. (08 Marks)
 - b. Explain different ways of positioning elements in CSS layout techniques.

(08 Marks)

c. What are the importances of responsive design? Explain briefly.

(04 Marks)

Module-3

- 5 a. Write a Javascript code that displays text "CORONA VIRUS" with increasing font size in the interval of 100 ms in blue color, when font size reaches 50 pt in teal color and should stop.

 (08 Marks)
 - b. Explain the advantages and disadvantages of client side scripting.

(06 Marks)

c. With suitable diagram, explain APACHE modules in PHP.

(06 Marks)



OR

a. With suitable code segment, explain 2 approaches for event handling in Java script.

 (08 Marks)
 b. Write PHP program to greet the user based on time.
 (08 Marks)
 c. Explain 2 methods in Java Script to access DOM nodes with examples.
 (04 Marks)

Module-4

a. List and explain different superglobal arrays.
b. Explain the different error handling methods, with suitable code segments.
c. How do you read or write file on server from PHP? Give example.
(08 Marks)
(08 Marks)
(08 Marks)

OR

- 8 a. Write a PHP program to create a class Employee with the following specifications:
 Data members: Name, ID, Payment.
 Member function: Read (geTters) and write (setters)
 - Use the above specification to read and print the information of 10 students.

 (08 Marks)

 Explain the support for inheritance in PHP with UML class diagram.

 (06 Marks)
 - c. Explain 3 approaches to restrict file size in file upload with suitable code segments.

 (06 Marks)

Module-5

- 9 a. Explain different types of caching used to improve performance of web application.
 - b. With suitable PHP script, explain loading and processing an XML document in Java script.

 (08 Marks)

 (08 Marks)
 - c. Explain creating and reading cookies with suitable PHP scripts. (04 Marks)

OR

- 10 a. Define AJAX. Expalin AJAX request by writing UML diagram. (08 Marks)
 - b. Explain JavaScript pseudo-classes with examples. (08 Marks)
 - c. Explain converting a JSON string to JSON object in JavaScript with suitable code segments.
 (04 Marks)

7

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

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1 With the help of block diagrams, explain Flynn's classification of computer architectures.

(10 Marks)

Describe the shared-memory multiprocessor models.

(10 Marks)

OR

2 Define the types of data dependence. Also compute the dependence graph for the following a. code segment:

S₁: Load R1, A S2: Add R2, R1

S₃: Move R1, R3

S4: Store B, R1

(10 Marks)

Explain the characteristics of the following static connection networks:

(i) Linear array.

(ii) Ring.

(iii) Binary tree.

(iv) Mesh.

(10 Marks)

Module-2

Distinguish between RISC and CISC processor architectures, with block diagrams. 3 a.

(10 Marks)

b. Explain VLIW processor architecture and its pipeline operations. (10 Marks)

Compare the two virtual memory models for multiprocessor systems. a.

(10 Marks)

Illustrate four level memory hierarchy. b.

(04 Marks)

Define the various page replacement policies. c.

(06 Marks)

Module-3

Illustrate daisy-chained and distributed arbitration techniques. 5 a.

Time →

(10 Marks)

List the various Cache mapping schemes. Also explain any two schemes. b.

(10 Marks)

OR

Consider the following pipeline reservation table: 6 a.

Stages

3 4 5 6 X S_1 X S_2 X X X

- (i) What are the forbidden latencies?
- What is the initial collision vector? (ii)
- (iii) Draw the state transition diagram
- (iv) List all the simple cycles.
- List all the greedy cycles. (v)
- (vi) Determine the minimal average Latency.

(10 Marks)

Explain the usage of prefetch buffers in instruction pipelining.

(06 Marks)

Illustrate internal data forwarding technique.

(04 Marks)

Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice. Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

Module-4

- 7 a. Define the two approaches of snoopy bus cache coherence protocol. Also write the state transition graphs for write through and write back cache. (10 Marks)
 - b. Explain in detail, three types of cache directory protocols.

(10 Marks)

OR

- Explain the flow control methods for resolving a collision between two packets requesting the same outgoing channel. (10 Marks)
 - b. Distinguish between store-and-forward routing and wormhole routing schemes. (04 Marks)
 - c. Define the various vector instruction types.

(06 Marks)

Module-5

- 9 a. Explain the mechanisms used for interprocess communication.
 b. Describe the compilation phases in parallel code generation.
 (06 Marks)
 (08 Marks)
 - c. Explain the sole-access protocols used in synchronization.

(06 Marks)

OR

- 10 a. Explain the concept of recorder buffer as a processor element. (06 Marks)
 - b. With the help of a block diagram, explain the role of reservation stations used in Tomasulo's algorithm.
 (08 Marks)
 - c. Write and explain state transition diagram of 2 bit branch predictor. (06 Marks)

* * * * *

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

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1 a. Define machine learning. Mention five applications of machine learning.

(06 Marks)

b. Explain concept learning task with an example.

(06 Marks)

c. Apply candidate elimination algorithm and obtain the version space considering the training examples given Table Q1(c).

Eyes	Nose	Head	Fcolor	Hair?	Smile?(TC)
Round	Triangle	Round	Purple	Yes	Yes
Square	Square	Square	Green	Yes	No
Square	Triangle	Round	Yellow	Yes	Yes
Round	Triangle	Round	Green	No	No
Square	Square	Round	Yellow	Yes	Yes

Table Q1(c)

(08 Marks)

OR

- 2 a. Explain the following with respect to designing a learning system:
 - i) Choosing the training experience
 - ii) Choosing the target function
 - iii) Choosing a representation for the target function.

(09 Marks)

- b. Write Find-S algorithm. Apply the Find-S for Table Q1(c) to find maximally specific hypothesis. (06 Marks)
- c. Explain the concept of inductive bias.

(05 Marks)

Module-2

- a. Explain the concept of decision tree learning. Discuss the necessary measures required to select the attributed for building a decision tree using ID3 algorithm. (11 Marks)
 - b. Explain the following with respect to decision tree learning:
 - i) Incorporating continuous valued attributes
 - ii) Alternative measures for selecting attributes
 - iii) Handling training examples with missing attribute values.

(09 Marks)

OR

4 a. Construct decision free using ID3 considering the following training examples:

Weekend	Weather	Parental availability	Wealthy	Decision class
Hp_0	Sunny	Yes	Rich	Cinema
H_2	Sunny	No	Rich	Tennis
H ₃	Windy	Yes	Rich	Cinema
H ₄	Rainy	Yes	Poor	Cinema
H ₅	Rainy	No	Rich	Home
H ₆	Rainy	Yes	Poor	Cinema
H ₇	Windy	No	Poor	Cinema
H ₈	Windy	No	Rich	Shopping
H ₉	Windy	Yes	Rich	Cinema
H ₁₀	Sunny	No	Rich	Tennis

Table Q4(b)

(12 Marks)

b. Discuss the issues of avoiding overfitting the data, and handling attributes with differing costs.

(08 Marks)

2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8=50, will be treated as malpractice. Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages

Module-3

5 a. Discuss the application of neural network which is used to steer an autonomous vehicle.

(06 Marks)

- b. Write Gradient descent algorithm to train a linear unit along with the derivation. (08 Marks)
- c. Discuss the issues of convergence, local minima and generalization, overfitting and stopping criterion. (06 Marks)

OR

6 a. List the appropriate problems for neural network learning.

(05 Marks)

b. Define preceptron and discuss its training rule.

(05 Marks)

c. Show the derivation of back propagation training rule for output unit weights.

(10 Marks)

Module-4

7 a. Explain Bayes theorem and mention the features of Bayesian learning.

(07 Marks)

- b. Prove that a maximum likelihood hypotheses cab be used to predict probabilities. (08 Marks)
- c. Explain Naïve Bayes classifier.

(05 Marks)

OR

8 a. Describe MAP learning algorithm.

(08 Marks)

b. Classify the test data and {Red, SUV, Domestic} using Naine Bayes classifier for the dataset shown in Table Q8(b).

	530% UF		AND 100 MILES
Color	Туре	Origin 4	Stolen
Red	Sports	Domestic	Yes
Red	Sports	Domestic	No
Red	Sports	Domestic	Yes
Yellow	Sports	Domestic	No
Yellow	Sports	Imported	Yes
Yellow	SUV	Imported	No.
Yellow	SUY	Imported	Yes
Yellow	SUV	Domestic	No
Red	SUV	Imported	No
Red	Sports	Imported	Yes

Table Q8(b)

(06 Marks)

c. Write and explain EM algorithm.

(06 Marks)

Module-5

- 9 a. Define:
 - Sample error
 - ii) True error
 - iii) Confidence intervals.

(06 Marks)

b. Explain K-nearest neighbor learning algorithm.

(08 Marks)

c. Write a note no Q – learning.

(06 Marks)

OR

- 10 a. Define mean value, variance, standard deviation and estimation bias of a random variable.
 - Explain locally weighted linear regression and radial basis functions. (04 Marks)
 - c. What is reinforcement learning? How it differs from other function approximation tasks?

(06 Marks)

USN				17CS74

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021 Cloud Computing and Its Applications

Time: 3 hrs. Max. Marks: 100 Note: Answer any FIVE full questions, choosing ONE full question from each module. 2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice. Module-1 Define cloud computing. With a neat diagram, explain major deployment models for cloud computing. (08 Marks) b. Explain cloud computing reference model with a neat diagram. (08 Marks) Discuss major milestones which have lead to cloud computing. (04 Marks) mportant Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages Describe the characteristics of virtualized environments with the required diagrams. 2 (08 Marks) b. With a neat diagram, explain Xen architecture and guest OS management. (06 Marks) Explain live migration and server consolidation with a neat diagram. (06 Marks) Module-2 Explain cloud computing architecture with a neat diagram. 3 (08 Marks) Discuss how SaaS provides access to application through the internet as a web based (04 Marks) c. Describe the various open challenges in clod computing. (08 Marks) OR Discuss the anatomy of Aneka container in detail. a. (12 Marks) Explain Aneka hybrid cloud deployment mode with a neat diagram. b. (08 Marks) Module-3 What is a thread? Discuss different thread APIs. (06 Marks) a. With a neat diagram compare thread life cycle in system threading and Aneka threading. b. (08 Marks) Explain Aneka thread application model with a listing for application creation and configuration. (06 Marks) OR Explain MPI reference scenario and MPI program structure with the required diagrams. a. (08 Marks) Explain task programming model with a neat diagram. b. (06 Marks) Discuss how workflows are managed in Aneka with required diagram. (06 Marks) Module-4 7 What is data intensive computing? Explain Amazon dynamo architecture with a neat (10 Marks) Explain map reduce computation workflow with a neat diagram. (10 Marks)

OR

8 a. Discuss the variations and extensions of map reduce.
b. Describe Aneka map reduce infrastructure with a neat diagram.
c. Discuss distributed life system support for execution of map reduce job with a neat diagram.
(06 Marks)
(06 Marks)

Module-5

9 a. Discuss the storage services provided by AWS.
b. Explain SQL Azure architecture with a neat diagram.
(08 Marks)

OR

- 10 a. Describe how cloud computing can be applied to remote ECG monitoring with a required diagram.

 (10 Marks)
 - b. Explain CRM and ERP implementations with three examples and the required diagrams.

(10 Marks)

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USN						17CS754

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

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1	a.	Explain the key characteristics of Data centre with neat diagram.	(08 Marks)
	b.	Explain the core elements of Data center.	(04 Marks)
	c.	Discuss the process of mapping user files to disk storage with neat diagram.	(08 Marks)
		OR	
2	a.	Describe the concept of Mirroring and Parity.	(04 Marks)
	b.	What is RAID? Explain the RAID levels with reference to nested RAID, I	
		RAID 5 with neat diagram.	(08 Marks)
	c.	Discuss the components of an intelligent storage system with neat diagram.	(08 Marks)
		Module-2	
3	a.	List and explain different Fibre channel connectivity options with neat diagram.	(08 Marks)
	b.	Define FCOE. Explain components of an FCOE network.	(08 Marks)
	c.	Define Zoning. Explain types of Zoning.	(04 Marks)
		the transfer of the control of the c	

OR

4	a.	Discuss components of NAS with neat diagram.	(06 Marks)
	b.	List and explain benefits of NAS.	(06 Marks)
	C	Explain object storage and Retrival in OSD with diagram	(08 Marks)

Module-3

5	a.	Define Business Continuity. Explain BC terminology in detail.	(06 Marks)
	b.	Discuss different Backup Topologies.	(08 Marks)
	C	Evaluin the concent of Backup in virtualized Environments	(06 Marks)

OR

6	a.	Explain local Replication technology using Host based methods. (08 Marks)
	b.	Discuss synchronous + Asynchronous and Synchronous + Disk Buffered of three site
		replication. (06 Marks)
	c.	Explain the concept of Remote replication and migration in a Virtualized Environment.

(06 Marks)

Module-4

- 7 a. Define Cloud Computing. List and explain the essential characteristics of cloud computing.
 (08 Marks)
 - b. List the cloud service models and discuss any two of them.
 c. List and explain benefits of cloud computing.
 (08 Marks)
 (04 Marks)

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OR

8 a. Explain Cloud Deployment models in detail. (10 Marks)
b. Explain Cloud Computing infrastructure in detail. (10 Marks)

Module-5

9 a. List and explain the different types of security threats.
b. Discus IPSAN CHAP protocol with neat diagram.
c. Discuss security solutions for FC-SAN and NAS.
(06 Marks)
(08 Marks)

OR

10 a. List and describe storage infrastructure management activities.
b. Explain Information lifecycle management with proper example.
Discuss two methods of storage tiering.

(08 Marks)

(08 Marks)

Describe how XML processing in PHP and Javascript.

(08 Marks)

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

 $/R_1 \leftarrow (R_3)/$

S₄: Store B, R₁

 $/Memory(B) \leftarrow (R_1)/$

(08 Marks)

b. List the different types of static connection networks and explain any three in detail.

(08 Marks)

Module-2

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

- 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

1 of 2

Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

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

- 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

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

Time: 3 hrs.

Max. Marks: 80

		A. A.	iums. oo
	Ν	ote: Answer any FIVE full questions, choosing ONE full question from each n	nodule.
		Mødule-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)
		Madula 2	
3	a.	Define decision tree learning. List and explain appropriate problems for	decision tree
3	a.	learning.	(06 Marks)
	b.	Explain the basic decision tree learning algorithm.	(05 Marks)
	C.	Describe Hypothesis space search in decision tree learning.	(05 Marks)
			(90 04010)
		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	e 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)
		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)
u	b.	Explain gradient descent algorithm.	(06 Marks)
	C.	Describe derivation of the back propagation rule.	(05 Marks)
		The state of the s	(00 1121111)
		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)
		170000	

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 lin	nit Theorem.	(%) T		(04 Marks)
C.	Explain K-Nearest	neighbor algorithm	m.	And the second	(04 Marks)

OR

a. Explain case-based reasoning
b. List and explain important differences of reinforcement algorithm with other function approximation tasks. (04 Marks)

c. Explain Q Learning Algorithm. (06 Marks)

USN			17CS7

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

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1 a. What are the 3 aims of HTML5? (04 Marks)

b. Explain the need of cascade in CSS. Explain the 3 principles of cascade with suitable CSS script segments. (08 Marks)

c. Explain two types of URL referencing techniques with suitable scripts in HTML5. (08 Marks)

OR

2 a. List and explain the different selectors available in CSS. (08 Marks)

b. Discuss the HTML5 semantic structure elements.
c. List the different text properties with a description.
(08 Marks)
(04 Marks)

Module-2

3 a. Explain different form widgets created with the <input> tag. (08 Marks)

b. Write HTML code for following table:

Day		SE	MIENAR
	SCHEE	DULE	TEOPIC TEOPIC
	BEGIN	END	
MONDAY 🔏	8:00 am	5:00 pm	Introduction to XML
WO THE STATE OF TH	8.00 am	3.00 pm	Validity DTD & NG
	11:00 am	2:00 pm	XPAT4
TUESDAY	11:00 am	2:00 pm	
	2:00 pm	5:00 pm	XSL transformations
WEDNESDAY	8:00 am	5:00 pm	XSL Formatting Objects
lb.	VII VI		

(12 Marks)

OR

- 4 a. Explain liquid layout design for websites with an example. List the fluid layout benefits and limitations. (08 Marks)
 - b. Explain different ways of positioning elements in CSS layout techniques. (08 Marks)
 - What are the importances of responsive design? Explain briefly. (04 Marks)

Module-3

- 5 a. Write a Javascript code that displays text "CORONA VIRUS" with increasing font size in the interval of 100 ms in blue color, when font size reaches 50 pt in teal color and should stop.

 (08 Marks)
 - b. Explain the advantages and disadvantages of client side scripting. (06 Marks)
 - c. With suitable diagram, explain APACHE modules in PHP. (06 Marks)

(06 Marks)

OR

- With suitable code segment, explain 2 approaches for event handling in Java script. (08 Marks) Write PHP program to greet the user based on time. b. (08 Marks)
 - Explain 2 methods in Java Script to access DOM nodes with examples. c. (04 Marks)

Module-4

7 List and explain different superglobal arrays. (08 Marks) Explain the different error handling methods, with suitable code segments. (08 Marks) How do you read or write file on server from PHP? Give example. (04 Marks)

- Write a PHP program to create a class Employee with the following specifications: 8 Data members: Name, ID, Payment. Member function: Read (geTters) and write (setters)
 - Use the above specification to read and print the information of 10 students. (08 Marks)
 - Explain the support for inheritance in PHP with UML class diagram. (06 Marks) Explain 3 approaches to restrict file size in file upload with suitable code segments.

Module-5

- Explain different types of caching used to improve performance of web application. 9
 - (08 Marks) With suitable PHP script, explain loading and processing an XML document in Java script. b.
 - (08 Marks) Explain creating and reading cookies with suitable PHP scripts. (04 Marks)

OR

- Define AJAX. Expalin AJAX request by writing UML diagram. 10 a. (08 Marks)
 - b. Explain JavaScript pseudo-classes with examples. (08 Marks)
 - Explain converting a JSON string to JSON object in JavaScript with suitable code segments. (04 Marks)

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17CS72

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

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1 With the help of block diagrams, explain Flynn's classification of computer architectures.

Describe the shared-memory multiprocessor models.

(10 Marks) (10 Marks)

OR

2 Define the types of data dependence. Also compute the dependence graph for the following code segment:

S₁: Load R1, A

S2: Add R2, R1

S₃: Move R1, R3

S₄: Store B, R1

(10 Marks)

b. Explain the characteristics of the following static connection networks:

(i) Linear array.

(ii) Ring.

(iii) Binary tree.

(iv) Mesh.

(10 Marks)

Module-2

Distinguish between RISC and CISC processor architectures, with block diagrams. 3

(10 Marks)

Explain VLIW processor architecture and its pipeline operations.

(10 Marks)

OR

4 Compare the two virtual memory models for multiprocessor systems. a

(10 Marks)

Illustrate four level memory hierarchy. b.

(04 Marks)

Define the various page replacement policies.

(06 Marks)

Module-3

Illustrate daisy-chained and distributed arbitration techniques. 5

Time →

(10 Marks)

List the various Cache mapping schemes. Also explain any two schemes. b.

(10 Marks)

6 Consider the following pipeline reservation table:

Stages	

X X X
X X
X X

- What are the forbidden latencies? (i)
- What is the initial collision vector? (ii)
- (iii) Draw the state transition diagram
- List all the simple cycles. (iv)
- List all the greedy cycles. (v)
- Determine the minimal average Latency.

(10 Marks)

b. Explain the usage of prefetch buffers in instruction pipelining.

(06 Marks)

Illustrate internal data forwarding technique.

(04 Marks)

Module-4

- 7 a. Define the two approaches of snoopy bus cache coherence protocol. Also write the state transition graphs for write through and write back cache. (10 Marks)
 - b. Explain in detail, three types of cache directory protocols.

(10 Marks)

OR

- 8 a. Explain the flow control methods for resolving a collision between two packets requesting the same outgoing channel.
 (10 Marks)
 - b. Distinguish between store-and-forward routing and wormhole routing schemes. (04 Marks)
 - c. Define the various vector instruction types.

(06 Marks)

Module-5

- 9 a. Explain the mechanisms used for interprocess communication.
 b. Describe the compilation phases in parallel code generation.
 (08 Marks)
 - c. Explain the sole-access protocols used in synchronization.

(06 Marks)

OR

10 a. Explain the concept of recorder buffer as a processor element. (06 Marks)

b. With the help of a block diagram, explain the role of reservation stations used in Tomasulo's algorithm.
 (08 Marks)

c. Write and explain state transition diagram of 2 bit branch predictor. (06 Marks)

* * * * *

USN 17CS73

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

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1 a. Define machine learning. Mention five applications of machine learning.

(06 Marks)

b. Explain concept learning task with an example.

(06 Marks)

c. Apply candidate elimination algorithm and obtain the version space considering the training examples given Table Q1(c).

Eyes	Nose	Head	Fcolor	Hair?	Smile?(TC)
Round	Triangle	Round	Purple	Yes	Yes
Square		Square	Green	Yes	No
Square	Triangle	Round	Yellow	Yes	Yes
Round	Triangle	Round	Green	No	No
Square	Square	Round	Yellow	Yes	Yes

Table Q1(c)

(08 Marks)

OR

- 2 a. Explain the following with respect to designing a learning system:
 - i) Choosing the training experience
 - ii) Choosing the target function
 - iii) Choosing a representation for the target function.

(09 Marks)

- b. Write Find-S algorithm. Apply the Find-S for Table Q1(c) to find maximally specific hypothesis. (06 Marks)
- c. Explain the concept of inductive bias.

(05 Marks)

Module-2

- a. Explain the concept of decision tree learning. Discuss the necessary measures required to select the attributed for building a decision tree using ID3 algorithm. (11 Marks)
 - b. Explain the following with respect to decision tree learning:
 - i) Incorporating continuous valued attributes
 - ii) Alternative measures for selecting attributes
 - iii) Handling training examples with missing attribute values.

(09 Marks)

OR

4 a. Construct decision tree using ID3 considering the following training examples:

Weekend	Weather	Parental availability	Wealthy	Decision class
Hp 💰	Sunny	Yes	Rich	Cinema
H_2	Sunny	No	Rich	Tennis
H ₃	Windy	Yes	Rich	Cinema
$\check{H_4}$	Rainy	Yes	Poor	Cinema
H ₅	Rainy	No	Rich	Home
H ₆	Rainy	Yes	Poor	Cinema
H ₇	Windy	No	Poor	Cinema
H ₈	Windy	No	Rich	Shopping
H ₉	Windy	Yes	Rich	Cinema
H ₁₀	Sunny	No	Rich	Tennis

Table Q4(b)

(12 Marks)

b. Discuss the issues of avoiding overfitting the data, and handling attributes with differing costs.

(08 Marks)

Module-3

5 a. Discuss the application of neural network which is used to steer an autonomous vehicle.

(06 Marks)

- b. Write Gradient descent algorithm to train a linear unit along with the derivation. (08 Marks)
- Discuss the issues of convergence, local minima and generalization, overfitting and stopping criterion.

OR

6 a. List the appropriate problems for neural network learning.

(05 Marks)

b. Define preceptron and discuss its training rule.

(05 Marks)

c. Show the derivation of back propagation training rule for output unit weights.

(10 Marks)

Module-4

7 a. Explain Bayes theorem and mention the features of Bayesian learning.

(07 Marks)

- b. Prove that a maximum likelihood hypotheses cab be used to predict probabilities. (08 Marks)
- c. Explain Naïve Bayes classifier.

(05 Marks)

OR

8 a. Describe MAP learning algorithm.

(08 Marks)

b. Classify the test data and {Red, SUV, Domestic} using Naine Bayes classifier for the dataset shown in Table Q8(b).

Color	Type	Origin 4	Stolen
Red	Sports	Domestic	Yes
Red	Sports	Domestic	No
Red	Sports	Domestic	Yes
Yellow	Sports	Domestic	No
Yellow	Sports	Imported	Yes
Yellow	SUV	Imported	No.
Yellow	SUV	Imported	Yes
Yellow	SUV	Domestic	» No
Red	SUV	Imported	No
Red	Sports	Imported	Yes

Table Q8(b)

(06 Marks)

c. Write and explain EM algorithm.

(06 Marks)

Module-5

- 9 a. Define:
 - Sample error
 - ii) True error
 - iii) Confidence intervals.

(06 Marks)

b. Explain K-nearest neighbor learning algorithm.

(08 Marks)

c. Write a note no Q – learning.

(06 Marks)

OR

- 10 a. Define mean value, variance, standard deviation and estimation bias of a random variable.

 (04 Marks)
 - b. Explain locally weighted linear regression and radial basis functions.

(10 Marks)

c. What is reinforcement learning? How it differs from other function approximation tasks?

(06 Marks)

* * * * * 2 of 2

Seventh Semester B.E. Degree Examination, Jan./Feb. 2021 Cloud Computing and Its Applications

Time: 3 hrs. Max. Marks: 100 Note: Answer any FIVE full questions, choosing ONE full question from each module. 2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice. Module-1 Define cloud computing. With a neat diagram, explain major deployment models for cloud computing. (08 Marks) Explain cloud computing reference model with a neat diagram. (08 Marks) Discuss major milestones which have lead to cloud computing. (04 Marks) important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. 2 Describe the characteristics of virtualized environments with the required diagrams. (08 Marks) With a neat diagram, explain Xen architecture and guest OS management. b. (06 Marks) Explain live migration and server consolidation with a neat diagram. (06 Marks) Module-2 Explain cloud computing architecture with a neat diagram. 3 (08 Marks) Discuss how SaaS provides access to application through the internet as a web based (04 Marks) Describe the various open challenges in clod computing. (08 Marks) OR Discuss the anatomy of Aneka container in detail. (12 Marks) a. Explain Aneka hybrid cloud deployment mode with a neat diagram. b. (08 Marks) Module-3 What is a thread? Discuss different thread APIs. (06 Marks) With a neat diagram compare thread life cycle in system threading and Aneka threading. b. (08 Marks) Explain Aneka thread application model with a listing for application creation and configuration. (06 Marks) OR Explain MPI reference scenario and MPI program structure with the required diagrams. a. (08 Marks) Explain task programming model with a neat diagram. b. (06 Marks) Discuss how workflows are managed in Aneka with required diagram. (06 Marks) Module-4 7 What is data intensive computing? Explain Amazon dynamo architecture with a neat (10 Marks)

1 of 2

(10 Marks)

Explain map reduce computation workflow with a neat diagram.

OR

a. Discuss the variations and extensions of map reduce.
b. Describe Aneka map reduce infrastructure with a neat diagram.
c. Discuss distributed life system support for execution of map reduce job with a neat diagram.
(06 Marks)
(06 Marks)

Module-5

9 a. Discuss the storage services provided by AWS.
b. Explain SQL Azure architecture with a neat diagram.
(08 Marks)

OR

- 10 a. Describe how cloud computing can be applied to remote ECG monitoring with a required diagram.

 (10 Marks)

 b. Explain CPM and EPP implementations with three examples and the required diagrams.
 - b. Explain CRM and ERP implementations with three examples and the required diagrams.

(10 Marks)

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GBGS SGHENE

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

Time: 3 hrs. Max. Marks: 100

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

2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice. Module-1 1 Explain the key characteristics of Data centre with neat diagram. (08 Marks) Explain the core elements of Data center. b. (04 Marks) Discuss the process of mapping user files to disk storage with neat diagram. (08 Marks) Describe the concept of Mirroring and Parity. (04 Marks) What is RAID? Explain the RAID levels with reference to nested RAID, RAID 3 and RAID 5 with neat diagram. (08 Marks) c. Discuss the components of an intelligent storage system with neat diagram. (08 Marks) Module-2 List and explain different Fibre channel connectivity options with neat diagram. 3 (08 Marks) b. Define FCOE. Explain components of an FCOE network. (08 Marks) Define Zoning. Explain types of Zoning. (04 Marks) a. Discuss components of NAS with neat diagram. (06 Marks) List and explain benefits of NAS. (06 Marks) b. Explain object storage and Retrival in OSD with diagram. (08 Marks) Module-3 Define Business Continuity. Explain BC terminology in detail. (06 Marks) Discuss different Backup Topologies. (08 Marks) Explain the concept of Backup in virtualized Environments. (06 Marks) c. OR Explain local Replication technology using Host based methods. (08 Marks) a. Discuss synchronous + Asynchronous and Synchronous + Disk Buffered of three site replication. (06 Marks) Explain the concept of Remote replication and migration in a Virtualized Environment. (06 Marks)

Module-4

- 7 Define Cloud Computing. List and explain the essential characteristics of cloud computing. a. (08 Marks)
 - List the cloud service models and discuss any two of them. (08 Marks) b.
 - List and explain benefits of cloud computing. (04 Marks)

Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

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OR

8 a.	a.	Explain Cloud Deployment models in detail.	(10 Marks)
	b.	Explain Cloud Computing infrastructure in detail.	(10 Marks)

Module-5

9	a.	List and explain the different types of security threats.	(06 Marks)
	b.	Discus IPSAN CHAP protocol with neat diagram.	(06 Marks)
	c.	Discuss security solutions for FC-SAN and NAS.	(08 Marks)

OR

	a.	List and describe storage infrastructure management activities.	(04 Marks)
	b.	Explain Information lifecycle management with proper example.	(08 Marks)
		Discuss two methods of storage tiering.	(08 Marks)

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USN	Γ		15CS71
		Seventh Semester B.E. Degree Examination, Jan./Feb. 2021	
		Web Technology and its Applications	
Tin	ne:	3 hrs. Max. Max. Max. Max. Max. Max. Max. Max	arks: 80
	N	ote: Answer any FIVE full questions, choosing ONE full question from each mod	
		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 <div> based HTML semantic structure elements.</div>	(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. (
	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)
		ONE TWO	
	b.	Fig.Q3(a) THREE FOUR	
	c.	With the sample HTML form, explain how forms work. List the various form-related HTML elements.	(06 Marks)
	0.		(04 Marks)
4	2	Explain positioning elements in CSS.	200 B# 1 V
7	a. b.	What is responsive design? Explain the four key components that make respons	(08 Marks)
	٥.	work.	(08 Marks)
		Module-3	(oo manks)
5	a.	What is Javascript? Explain the advantages and disadvantages of client side scripti	nα
		Trial is surescript. Explain the advantages and disadvantages of enem side scripti	uig. (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.	
	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)
0	•	What are applies? Furficin have it works	702020202020
9	a. b.	What are cookies? Explain how it works. What is caching? Explain two basic strategies of caching web application.	(08 Marks)
	0.		(08 Marks)
10	a.	Write a note on Arynchronous file transformation.	(0.1.2.2
10	b.	What is XML? Write the syntax rule for XML.	(04 Marks)
	533	The state of the s	(04 Marks)

(08 Marks)

Important Note: 1. On completing your answers, compulsority draw diagonal cross lines on the remaining blank pages.

2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

c. Describe how XML processing in PHP and Javascript.

GBGS SCHEME

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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

- 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:

S1: Load R1, 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

 $/R_1 \leftarrow (R_3)/$

S4: Store B, R1

 $/Memory(B) \leftarrow (R_1)/$

(08 Marks)

b. List the different types of static connection networks and explain any three in detail.

(08 Marks)

Module-2

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

1 of 2

Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

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				
$S_2 \\ S_3$			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

- 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)

GBGS SGHEME

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

Time: 3 hrs.

Max. Marks: 80

1 111	ne	ones. Max	Marks: 80
		lota, August and EIVE C. II and the College of the	
	IV	ote: Answer any FIVE full questions, choosing ONE full question from each	nodule.
		Module 1	
1	a.	Define machine learning. Explain with specific examples.	/OC NA 1
*	b.	How you will design a learning system? Explain with examples.	(06 Mark
	c.	List and explain perspectives and issues in Machine Learning.	(06 Mark
	C.	List and explain perspectives and issues in Machine Learning.	(04 Mark
		OR OR	
2	a.	Define concept learning. Explain the task of concept learning.	(06 Mark
	b.	How the concept learning can be viewed as the task of searching? Explain.	(04 Mark
	C.	Explain with examples:	(0.1.2.2.1.1.
		i) Find-S algorithm	
		ii) Candidate Elimination algorithm	(06 Mark
		Module-2	
3	a.	Define decision tree learning. List and explain appropriate problems for	r decision tr
	40	learning.	(06 Mark
	b.	Explain the basic decision tree learning algorithm	(05 Mark
	C.	Describe Hypothesis space search in decision tree learning.	(05 Mark
4	_	Define industrial A. Francis industrial is desired.	
4	a.	Define inductive bias. Explain inductive bias in decision tree learning.	(06 Mark
	b.	Give the differences between the hypothesis space search in ID3 and candid algorithm.	
	C.	List and explain issues in decision tree learning.	(04 Mark
	C.	List and explain issues in decision tree learning.	(06 Mark
		Module-3	
5	a.	Define Artificial neural networks. Explain biological learning systems.	(05 Mark
		Explain representations of Neural network	(05 Mark
		Describe the characteristics of Back propagation algorithm.	(06 Mark
		OR	
6	a.	Define Perceptron. Explain representational power of Perceptrons.	(05 Mark
	b.	Explain gradient descent algorithm.	(06 Mark
	C.	Describe derivation of the back propagation rule.	(05 Mark
_		Module-4	
7	a.	List and explain features of Bayesian learning methods.	(06 Mark
	b.	Describe Brute-Force map learning algorithm.	(05 Mark
	C.	Explain maximum likelihood and least-squared error hypothesis.	(05 Mark

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.	(W. /		(04 Marks)
	C.	Explain K-Nearest neighbor algorithm	n.	All hard	(04 Marks)

OR

a.	Explain case-based reasoning.	And Your live	(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)

10

Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

17CS71

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

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1 a. What are the 3 aims of HTML52

(04 Marks)

- Explain the need of cascade in CSS. Explain the 3 principles of cascade with suitable CSS script segments.
- c. Explain two types of URL referencing techniques with suitable scripts in HTML5. (08 Marks)

OR

2 a. List and explain the different selectors available in CSS.

(08 Marks)

b. Discuss the HTML5 semantic structure elements.

(08 Marks)

c. List the different text properties with a description.

(04 Marks)

Module-2

3 a. Explain different form widgets created with the <input> tag

(08 Marks)

b. Write HTML code for following table:

Day		SE	MIENAR
	SCHEL	DULE	TEOPIC
	BEGIN	END	
MONDAY /	8:00 am	5:00 pm	Introduction to XML
morron.	3.00 am	3.00 pm	Validity : DTD & NG
	11:00 am	2:00 pm	XPAT4
TUESDAY	11:00 am	2:00 pm	
. (3)	2:00 pm	5:00 pm	XSL transformations
WEDNESDAY	8:00 am	5:00 pm	XSL Formatting Objects

(12 Marks)

OR

- 4 a. Explain liquid layout design for websites with an example. List the fluid layout benefits and limitations. (08 Marks)
 - b. Explain different ways of positioning elements in CSS layout techniques.

(08 Marks)

c. What are the importances of responsive design? Explain briefly.

(04 Marks)

Module-3

- 5 a. Write a Javascript code that displays text "CORONA VIRUS" with increasing font size in the interval of 100 ms in blue color, when font size reaches 50 pt in teal color and should stop.

 (08 Marks)
 - b. Explain the advantages and disadvantages of client side scripting.

(06 Marks)

c. With suitable diagram, explain APACHE modules in PHP.

(06 Marks)

- OR With suitable code segment, explain 2 approaches for event handling in Java script. (08 Marks) Write PHP program to greet the user based on time. b. (08 Marks) c. Explain 2 methods in Java Script to access DOM nodes with examples. (04 Marks) Module-7 List and explain different superglobal arrays. (08 Marks) Explain the different error handling methods, with suitable code segments. (08 Marks) How do you read or write file on server from PHP? Give example. (04 Marks) Write a PHP program to create a class Employee with the following specifications: 8 Data members: Name, ID, Payment. Member function: Read (geTters) and write (setters) Use the above specification to read and print the information of 10 students. (08 Marks) Explain the support for inheritance in PHP with UML class diagram. (06 Marks) Explain 3 approaches to restrict file size in file upload with suitable code segments. (06 Marks) Module-5 9 Explain different types of caching used to improve performance of web application. (08 Marks) With suitable PHP script, explain loading and processing an XML document in Java script. (08 Marks) Explain creating and reading cookies with suitable PHP scripts. (04 Marks) OR. Define AJAX. Expalin AJAX request by writing UML diagram. 10 a. (08 Marks) b. Explain JavaScript pseudo-classes with examples.
- b. Explain JavaScript pseudo-classes with examples.
 c. Explain converting a JSON string to JSON object in JavaScript with suitable code segments.

 (04 Marks)

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

Time: 3 hrs.

Max. Marks: 100

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

Module-1

With the help of block diagrams, explain Flynn's classification of computer architectures. 1

(10 Marks)

Describe the shared-memory multiprocessor models.

(10 Marks)

OR

2 Define the types of data dependence. Also compute the dependence graph for the following code segment:

S₁: Load R1, A

S2: Add R2, R1

S₃: Move R1, R3

S₄: Store B, R1

(10 Marks)

b. Explain the characteristics of the following static connection networks:

- (i) Linear array.
- (ii) Ring.
- (iii) Binary tree.
- (iv) Mesh.

(10 Marks)

Module-2

3 Distinguish between RISC and CISC processor architectures, with block diagrams. a.

(10 Marks)

Explain VLIW processor architecture and its pipeline operations. b.

(10 Marks)

Compare the two virtual memory models for multiprocessor systems.

(10 Marks)

Illustrate four level memory hierarchy. b.

(04 Marks)

Define the various page replacement policies.

(06 Marks)

Module-3

Illustrate daisy-chained and distributed arbitration techniques. 5

Time \rightarrow

(10 Marks)

List the various Cache mapping schemes. Also explain any two schemes.

(10 Marks)

OR

6 Consider the following pipeline reservation table:

> 2 3

Stages

4 5 6 X S_1 X X S_2 X X

- What are the forbidden latencies? (i)
- (ii) What is the initial collision vector?
- Draw the state transition diagram (iii)
- List all the simple cycles. (iv)
- List all the greedy cycles. (v)
- Determine the minimal average Latency. (vi)

(10 Marks)

Explain the usage of prefetch buffers in instruction pipelining.

(06 Marks)

Illustrate internal data forwarding technique.

(04 Marks)

2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice. Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

Module-4

- 7 a. Define the two approaches of snoopy bus cache coherence protocol. Also write the state transition graphs for write through and write back cache. (10 Marks)
 - b. Explain in detail, three types of cache directory protocols.

(10 Marks)

OR

- Explain the flow control methods for resolving a collision between two packets requesting the same outgoing channel. (10 Marks)
 - b. Distinguish between store-and-forward routing and wormhole routing schemes. (04 Marks)
 - c. Define the various vector instruction types.

(06 Marks)

Module-5

- 9 a. Explain the mechanisms used for interprocess communication.
 b. Describe the compilation phases in parallel code generation.
 (08 Marks)
 - c. Explain the sole-access protocols used in synchronization.

(06 Marks)

OR

- 10 a. Explain the concept of recorder buffer as a processor element. (06 Marks)
 - With the help of a block diagram, explain the role of reservation stations used in Tomasulo's algorithm.

 (08 Marks)
 - c. Write and explain state transition diagram of 2 bit branch predictor. (06 Marks)

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17CS73

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

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1 a. Define machine learning. Mention five applications of machine learning.

(06 Marks)

b. Explain concept learning task with an example.

(06 Marks)

 Apply candidate elimination algorithm and obtain the version space considering the training examples given Table Q1(c).

Eyes	Nose	Head	Fcolor	Hair?	Smile?(TC)
Round	Triangle	Round	Purple	Yes	Yes
Square	Square	Square	Green	Yes	No
Square	Triangle	Round	Yellow	Yes	Yes
Round	Triangle	Round	Green	No	No
Square	Square	Round	Yellow	Yes	Yes

Table Q1(c)

(08 Marks)

OR

- 2 a. Explain the following with respect to designing a learning system:
 - i) Choosing the training experience
 - ii) Choosing the target function
 - iii) Choosing a representation for the target function.

(09 Marks)

- b. Write Find-S algorithm. Apply the Find-S for Table Q1(c) to find maximally specific hypothesis. (06 Marks)
- c. Explain the concept of inductive bias.

(05 Marks)

Module-2

- a. Explain the concept of decision tree learning. Discuss the necessary measures required to select the attributed for building a decision tree using ID3 algorithm. (11 Marks)
 - b. Explain the following with respect to decision tree learning:
 - i) Incorporating continuous valued attributes
 - ii) Alternative measures for selecting attributes
 - iii) Handling training examples with missing attribute values.

(09 Marks)

OR

a. Construct decision free using ID3 considering the following training examples:

Weekend	Weather	Parental availability	Wealthy	Decision class
He o	Sunny	Yes	Rich	Cinema
H_2	Sunny	No No	Rich	Tennis
H ₃	Windy	Yes	Rich	Cinema
H_4	Rainy	Yes	Poor	Cinema
H ₅	Rainy	No	Rich	Home
H ₆	Rainy	Yes	Poor	Cinema
H ₇	Windy	No	Poor	Cinema
H ₈	Windy	No	Rich	Shopping
H ₉	Windy	Yes	Rich	Cinema
H ₁₀	Sunny	No	Rich	Tennis

Table Q4(b)

(12 Marks)

b. Discuss the issues of avoiding overfitting the data, and handling attributes with differing costs.

(08 Marks)

Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice. mportant Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

Module-3

5 a. Discuss the application of neural network which is used to steer an autonomous vehicle.

(06 Marks)

- b. Write Gradient descent algorithm to train a linear unit along with the derivation. (08 Marks)
- Discuss the issues of convergence, local minima and generalization, overfitting and stopping criterion.
 (06 Marks)

OF

6 a. List the appropriate problems for neural network learning.

(05 Marks)

b. Define preceptron and discuss its training rule.

(05 Marks)

c. Show the derivation of back propagation training rule for output unit weights.

(10 Marks)

Module-4

7 a. Explain Bayes theorem and mention the features of Bayesian learning.

(07 Marks)

- b. Prove that a maximum likelihood hypotheses cab be used to predict probabilities. (08 Marks)
- c. Explain Naïve Bayes classifier.

(05 Marks)

OR

8 a. Describe MAP learning algorithm.

(08 Marks)

b. Classify the test data and {Red, SUV, Domestic} using Naine Bayes classifier for the dataset shown in Table Q8(b).

Color	Type	Origin 4	Stolen
Red	Sports	Domestic	Yes
Red	Sports	Domestic	No
Red	Sports	Domestic	Yes
Yellow	Sports	Domestic	No
Yellow	Sports	Imported	Yes
Yellow	SUV	Imported	No
Yellow	SUV	Imported	Yes
Yellow	SUV	Domestic	» No
Red	SUV	Imported	No
Red	Sports	Imported	Yes

Table O8(b)

(06 Marks)

c. Write and explain EM algorithm.

(06 Marks)

Module-5

- 9 a. Define:
 - i) Sample error
 - ii) True error
 - iii) Confidence intervals.

(06 Marks)

b. Explain K-nearest neighbor learning algorithm.

(08 Marks)

c. Write a note no Q – learning.

(06 Marks)

OR

- a. Define mean value, variance, standard deviation and estimation bias of a random variable.
 (04 Marks)
 - b. Explain locally weighted linear regression and radial basis functions.

(10 Marks)

What is reinforcement learning? How it differs from other function approximation tasks?

(06 Marks)

GRGS SCHEME

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Seventh Semester B.E. Degree Examination, Jan./Feb. 2021 Cloud Computing and Its Applications

Time: 3 hrs. Max. Marks: 100 Note: Answer any FIVE full questions, choosing ONE full question from each module. 2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice. Module-1 Define cloud computing. With a neat diagram, explain major deployment models for cloud computing. (08 Marks) b. Explain cloud computing reference model with a neat diagram. (08 Marks) Discuss major milestones which have lead to cloud computing. (04 Marks) Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages 2 Describe the characteristics of virtualized environments with the required diagrams. (08 Marks) With a neat diagram, explain Xen architecture and guest OS management. b. (06 Marks) Explain live migration and server consolidation with a neat diagram. (06 Marks) Module-2 Explain cloud computing architecture with a neat diagram. (08 Marks) Discuss how SaaS provides access to application through the internet as a web based b. (04 Marks) Describe the various open challenges in clod computing. (08 Marks) OR Discuss the anatomy of Aneka container in detail. (12 Marks) a. Explain Aneka hybrid cloud deployment mode with a neat diagram. b. (08 Marks) Module-3 What is a thread? Discuss different thread APIs. (06 Marks) With a neat diagram compare thread life cycle in system threading and Aneka threading, b. (08 Marks) Explain Aneka thread application model with a listing for application creation and configuration. (06 Marks) OR a. Explain MPI reference scenario and MPI program structure with the required diagrams. (08 Marks) Explain task programming model with a neat diagram. (06 Marks) Discuss how workflows are managed in Aneka with required diagram. (06 Marks) Module-4 What is data intensive computing? Explain Amazon dynamo architecture with a neat (10 Marks) Explain map reduce computation workflow with a neat diagram.

1 of 2

(10 Marks)

OR

a. Discuss the variations and extensions of map reduce.
b. Describe Aneka map reduce infrastructure with a neat diagram.
c. Discuss distributed life system support for execution of map reduce job with a neat diagram.
(06 Marks)
(06 Marks)

Module-5

a. Discuss the storage services provided by AWS.
b. Explain SQL Azure architecture with a neat diagram. (08 Marks)

OR

- Describe how cloud computing can be applied to remote ECG monitoring with a required diagram.

 (10 Marks)

 Explain CRM and ERP implementations with three examples and the required diagrams.
 - b. Explain CRM and ERP implementations with three examples and the required diagrams.

(10 Marks)

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

Time: 3 hrs. Max. Marks: 100

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

Module-1

1	a.	Explain the key characteristics of Data centre with neat diagram.	(08 Marks)
	b.	Explain the core elements of Data center.	(04 Marks)
	c.	Discuss the process of mapping user files to disk storage with neat diagram.	(08 Marks)
		OR	
2	a.	Describe the concept of Mirroring and Parity.	(04 Marks)
	b.		RAID 3 and (08 Marks)
	c.	B	(08 Marks)

Module-2

3	a.	List and explain different Fibre channel connectivity options with neat diagram.	(08 Marks)
	b.	Define FCOE. Explain components of an FCOE network.	(08 Marks)
	c.	Define Zoning. Explain types of Zoning.	(04 Marks)

OR

4	a.	Discuss components of NAS with neat diagram.	(06 Marks)
	b.	List and explain benefits of NAS.	(06 Marks)
	c.	Explain object storage and Retrival in OSD with diagram.	(08 Marks)

Module-3

5	a.	Define Business Continuity. Explain BC terminology in detail.	(06 Marks)
	b.	Discuss different Backup Topologies.	(08 Marks)
	c.	Explain the concept of Backup in virtualized Environments.	(06 Marks)

OR

6	Explain local Replication technology using Host based methods. (08 Marks)	
	b.	Discuss synchronous + Asynchronous and Synchronous + Disk Buffered of three site
		replication. (06 Marks)
	c.	Explain the concept of Remote replication and migration in a Virtualized Environment.
		(06 Marks)

Module-4

7	a.	Define Cloud Computing. List and explain the essential characteristics of clo	oud computing.
			(08 Marks)
	b.	List the cloud service models and discuss any two of them.	(08 Marks)

c. List and explain benefits of cloud computing.

(04 Marks)

Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.

2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

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		OR	
8	a.	Explain Cloud Deployment models in detail.	(10 Marks)
U	b.	Explain Cloud Computing infrastructure in detail.	(10 Marks)
	o.	Explain Cloud Comparing Infrastructure in detail.	(10 Marks)
		Module-5	
9	a.	List and explain the different types of security threats.	(06 Marks)
	b.	Discus IPSAN CHAP protocol with neat diagram.	(06 Marks)
	c.	Discuss security solutions for FC-SAN and NAS.	(08 Marks)
	C.	Discuss security solutions for Te-brit and 1476.	(00 Marks)
		OR	
10	a.	List and describe storage infrastructure management activities.	(04 Marks)
10	b.	Explain Information lifecycle management with proper example.	(08 Marks)
	0.	Discuss two methods of storage tiering.	
		Discuss two methods of storage tiering.	(08 Marks)

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	Alex	Seventh Semester B.E. Degree Examination, Jan./Feb. 2021	l
		Web Technology and its Applications	
Tir	ne: 1		larks: 80
1		ote: Answer any FIVE full questions, choosing ONE full question from each mo	
	1.4		шите.
		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 <div> based HTML semantic structure elements.</div>	(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)
		ONE TWO	
		Fig.Q3(a) 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 respon	sive design
		work.	(08 Marks)
		Module-3	
5	a.	What is Javascript? Explain the advantages and disadvantages of client side script	ting.
			(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	30 S
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)
		1900000 (A)	AND RESIDENCE OF THE PARTY OF T

Important Note: 1. On completing your answers, compulsority draw diagonal cross lines on the remaining blank pages.

2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

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

- 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:

S₁: Load R₁, 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

 $/R_1 \leftarrow (R_3)/$

S₄: Store B, R₁

 $/Memory(B) \leftarrow (R_1)/$

(08 Marks)

b. List the different types of static connection networks and explain any three in detail.

(08 Marks)

Module-2

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

1 of 2

Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8=50, will be treated as malpractice.

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

	1	2	3	4	5	6	7	8
S_1 S_2	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

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

Time: 3 hrs.

Max. Marks: 80

	Ν	lote: Answer any FIVE full questions, choosing ONE full question from each	module.
		Mødule-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)
4	a.	Define inductive bias. Explain inductive bias in decision tree learning.	(06 Marks)
WEED)	b.	Give the differences between the hypothesis space search in ID3 and candid	
	0.	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)
	Co	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)
7	0	Module-4 List and applain factures of Payagian Journing methods	(0) 14
7	a. b	List and explain features of Bayesian learning methods.	(06 Marks)
	b. c.	Describe Brute-Force map learning algorithm. Explain maximum likelihood and least-squared error hypothesis.	(05 Marks)
	C.	Explain maximum arkenhood 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

a.	Define the follows	ng with examples.	w. 1990.7		
	i) Sample error	ii) True error	iii) Mean	iv) Variance.	(08 Marks)
b.	Explain central lin	nit Theorem.			(04 Marks)
c.	Explain K-Neares	t neighbor algorithm	n.		(04 Marks)

OR

	Explain case-based reasoning.	And W	(06 Marks)
b.	List and explain important differences	of reinforcement algorithm	with other function
	approximation tasks.	The state of the s	(04 Marks)
C.	Explain Q Learning Algorithm.		(06 Marks)

10