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15CS71

Seventh Semester B.E. Degree Examination, June/July 2019
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 are the three aims of HTML5 and expand the following :
HTML, XML, DOCTYPE, PHP, WHATWG. (08 Marks)
- b. List out the three types of lists and explain them with an example. (08 Marks)

OR

- 2 a. Define CSS and list out its benefits with explanation. (08 Marks)
- b. What are selectors? List and explain selectors with an example. (08 Marks)

Module-2

- 3 a. Apply the following table elements to display the following table:
Table elements : table, td, tr, th, tbody, tfoot, thread

SLNO	USN	Name	Dept
1			
2			
Total No. of rows	2	-	-

- b. Explain with a neat diagram how form works? Discuss about query string and micro formats. (08 Marks)

OR

- 4 a. Identify the approaches to CSS layouts and explain them in detail. (08 Marks)
- b. What is responsive design? Why its important? Explain in detail. (08 Marks)

Module-3

- 5 a. What is JavaScript and listener? Discus the advantages and disadvantages of client side scripting. (08 Marks)
- b. What are s/w layers? What benefits do they provide? Explain in detail. (08 Marks)

OR

- 6 a. Compare the Server-Side Technologies in detail. (08 Marks)
- b. Write a PHP program to demonstrate the session. Program: Store page view count on refresh. (08 Marks)

Module-4

- 7 a. What are super global arrays? List and explain. (08 Marks)
- b. Define constructor and discuss the concepts of inheritance, polymorphism and object interface with respect to OOP. (08 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. Explain with an example, the two basic techniques for read/write files in PHP. (08 Marks)
b. Write the PHP code to validate phone number. (08 Marks)

Module-5

- 9 a. What are cookies? What is the purpose of it? Demonstrate cookies with PHP program. (08 Marks)
b. Discuss jQuery selectors in detail. (08 Marks)

OR

- 10 a. Discuss the following : (08 Marks)
(i) Session cookies (ii) Persistent cookies (iii) Session state
b. With a neat diagram explain SOAP and RESET web services. (08 Marks)

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15CS72

Seventh Semester B.E. Degree Examination, June/July 2019 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. Explain the evolution of computer architecture. (08 Marks)
b. Explain with diagram the operational model of SIMD super computer. (08 Marks)

OR

- 2 a. Explain the Bernstein's conditions for parallelism. Detect the parallelism in the following code using Bernstein's conditions. (Assume no pipeline).
 $P_1 : C = D \times E$; $P_2 : M = G + C$; $P_3 : A = B + C$; $P_4 : C = L + M$; $P_5 : G \div E$. (08 Marks)
b. With a diagram, explain the operation of tagged token data flow computer. (08 Marks)

Module-2

- 3 a. Distinguish between typical RISC and CISC process architectures. (08 Marks)
b. With a diagrams, explain the models of a basic scalar computer system. (08 Marks)

OR

- 4 a. With a diagram, explain a typical superscalar RISC processor architecture consisting of an integer unit and a floating point unit. (10 Marks)
b. With a diagram, explain the hierarchical memory technology. (06 Marks)

Module-3

- 5 a. Explain with diagram, the backplane bus specification. (08 Marks)
b. With the diagrams, explain the central arbitration and distribution arbitration. (08 Marks)

OR

- 6 a. For the reservation table of a non-linear pipeline shown below :

	1	2	3	4	5	6
S ₁	X					X
S ₂		X			X	
S ₃			X			
S ₄				X		
S ₅		X				X

- i) What are the forbidden latencies? Write initial collision vector
ii) Draw the state transition diagram
iii) List all simple cycles and greedy cycles
iv) Determine MAL. (10 Marks)
- b. Explain prefetch buffer and internal data forwarding mechanisms used in instruction pipelining. (06 Marks)

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Module-4

- 7 a. Explain crossbar networks and cross-point switch design in multiprocessor system. (08 Marks)
b. With necessary sketches, explain the cache-coherence problems in data sharing and in process migration. (08 Marks)

OR

- 8 a. With a diagram, explain the architecture of the connection machine CM-2. (08 Marks)
b. Explain the context-switching policies. (08 Marks)

Module-5

- 9 a. Explain the concurrent OOP and an actor model in object – oriented model. (08 Marks)
b. Explain the fairness policies and sole-access –protocols in the principles of synchronization. (08 Marks)

OR

- 10 a. What are the major hurdles of pipelining? Illustrate the branch hazards in detail. (08 Marks)
b. Explain the dynamic scheduling of a pipeline using Tomasulo's algorithm. (08 Marks)

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15CS73

Seventh Semester B.E. Degree Examination, June/July 2019 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. Describe the steps in designing learning system. (08 Marks)
 b. Write Find-S algorithm and explain with example. (04 Marks)
 c. Explain List-Then-Eliminate algorithm. (04 Marks)

OR

- 2 a. List out any 5 applications of machine learning. (05 Marks)
 b. What do you mean by hypothesis space, instance space and version space? (03 Marks)
 c. Find the maximally general hypothesis and maximally specific hypothesis for the training examples given in the table using candidate elimination algorithm. (08 Marks)

Day	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	Cold	High	Strong	Warm	Change	No
4	Sunny	Warm	High	Strong	Cool	Change	Yes

Module-2

- 3 Construct decision tree for the following data using ID3 algorithm.

Day	A1	A2	A3	Classification
1	True	Hot	High	No
2	True	Hot	High	No
3	False	Hot	High	Yes
4	False	Cool	Normal	Yes
5	False	Cool	Normal	Yes
6	True	Cool	High	No
7	True	Hot	High	No
8	True	Hot	Normal	Yes
9	False	Cool	Normal	Yes
10	False	Cool	High	No

(16 Marks)

OR

- 4 a. Explain the concept of decision tree learning. Discuss the necessary measure required to select the attributes for building a decision tree using ID3 algorithm. (08 Marks)
 b. Discuss the issues of avoiding over fitting the data, handling continuous data and missing values in decision trees. (08 Marks)

Module-3

- 5 a. Explain artificial neural network based on perception concept with diagram. (06 Marks)
 b. What is gradient descent and delta rule? Why stochastic approximation to gradient descent is needed? (04 Marks)
 c. Describe the multilayer neural network. Explain why back propagation algorithm is required. (06 Marks)

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OR

- 6 a. Derive the back propagation rule considering the output layer and training rule for output unit weights. (08 Marks)
- b. What is squashing function 3 why is it needed? (04 Marks)
- c. List out and explain in briefly representation power of feed forward networks. (04 Marks)

Module-4

- 7 a. Explain maximum a posteriori (MAP) hypothesis using Bayes theorem. (06 Marks)
- b. Estimate conditional probabilities of each attributes {colour, legs, height, smelly} for the species classes: {M, H} using the data given in the table. Using these probabilities estimate the probability values for the new instance – (Colour = Green, Legs = 2, Height = Tall and Smelly = No) (10 Marks)

No	Colour	Legs	Height	Smelly	Species
1	White	3	Short	Yes	M
2	Green	2	Tall	No	M
3	Green	3	Short	Yes	M
4	White	3	Short	Yes	M
5	Green	2	Short	No	H
6	White	2	Tall	No	H
7	White	2	Tall	No	H
8	White	2	Short	Yes	H

OR

- 8 a. Explain Naive Bayes classifier and Bayseian belief networks. (10 Marks)
- b. Prove that how maximum likelihood (Bayesian learning) can be used in any learning algorithms that are used to minimize the squared error between actual output hypothesis and predicted output hypothesis. (06 Marks)

Module-5

- 9 a. Explain locally weighted linear regression. (08 Marks)
- b. What do you mean by reinforcement learning? How reinforcement learning problem differs from other function approximation tasks. (05 Marks)
- c. Write down Q-learning algorithm. (03 Marks)

OR

- 10 a. What is instance based learning? Explain K-Nearest neighbour algorithm. (08 Marks)
- b. Explain sample error, true error, confidence intervals and Q-learning function. (08 Marks)

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15CS744

Seventh Semester B.E. Degree Examination, June/July 2019

UNIX System Programming

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. What do you understand by the term feature test macros? List all the five feature test macros along with their meanings. (08 Marks)
- b. Write C/C++ program to check the following limit using function defined by POSIX.1
 - i) Number of clock ticks per second
 - ii) Maximum number of child process
 - iii) Maximum path length
 - iv) Maximum number of character in a filename (08 Marks)

OR

- 2 a. Write notes on: i) POSIX.1 FIPS standard ii) X/open standard (08 Marks)
- b. Explain the common characteristics of API and describe the error status code and their meaning. (08 Marks)

Module-2

- 3 a. What is a file? Explain different file types available in UNIX or POSIX systems. Also write the commands to create all the files. (08 Marks)
- b. Explain the UNIX Kernel support for files with a neat diagram. (08 Marks)

OR

- 4 a. Explain the following API's along with prototypes:
 - i) open
 - ii) fcntl
 - iii) lseek
 - iv) stat & fstat (08 Marks)
- b. Explain directory file API's and FIFO file API's. (08 Marks)

Module-3

- 5 a. Explain with a neat diagram how a C-program is started and terminated in various ways. (08 Marks)
- b. Describe the UNIX Kernel support for a process. Show the related data structure. (08 Marks)

OR

- 6 a. Explain the following functions: i) waitid ii) wait3() iii) wait4() (08 Marks)
- b. What is job control? What are the three forms of support from OS required for job control mechanism? Explain with the help of neat diagram. (08 Marks)

Module-4

- 7 a. What is signal? Discuss any five POSIX defined signals. Explain how to set up a signal handler. (08 Marks)
- b. What is signal mask of a process? Explain sigprocmask function along with its prototype. (08 Marks)

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OR

- 8 a. Briefly explain the Kill()API and alarm()API. (08 Marks)
b. What is daemon? Explain coding rules and error logging. (08 Marks)

Module-5

- 9 a. What are pipes? What are its limitations? Write a program to send data from parent to child over a pipe. (08 Marks)
b. What is FIFO? Explain how it is used in IPC. Discuss with an example, the client server communications using FIFO's. (08 Marks)

OR

- 10 a. What are message queues? Write the structure of the message queue and explain each member in detail. (08 Marks)
b. Write short notes on:
i) Stream pipes
ii) Passing File Descriptors (08 Marks)

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