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15CS71

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.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. Briefly explain the history of markup languages. (04 Marks)
 b. Write a note on XHTML and HTML5. (04 Marks)
 c. Explain : i) <a> ii) iii) <p> iv) <div> elements with examples. (08 Marks)

OR

- 2 a. With an example explain different levels of style sheets. (08 Marks)
 b. List the different selectors available in CSS and explain in detail (08 Marks)

Module-2

- 3 a. Explain different form widgets created with the <input> tag. (08 Marks)
 b. Write HTML code for the following table :

Time Day		9.00 am to 1.15 pm	2.00 pm to 5.00 pm
Mon to Fri	Sub	Theory class	ML/WTA Lab
	FI	ABC/EFG/XYZ	AD block, 1 st *floor
Sat	Sub	Extra curricular activity	
	FI		

(08 Marks)

OR

- 4 a. Discuss the difference between relative and absolute positioning. (08 Marks)
 b. What does floating an element do in CSS? How do you float an element? (08 Marks)

Module-3

- 5 a. Discuss the advantages and disadvantages of client – side scripting. (08 Marks)
 b. Write a JavaScript code that displays text “VTU BELAGAVI” with increasing font size in the interval of 100 ms in blue color, when the font size reaches 50 pt it should stop. (08 Marks)

OR

- 6 a. With a neat diagram, explain client and server script execution. (08 Marks)
 b. Write a PHP program to greet the user based on time. (08 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
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Module-4

- 7 a. Explain \$_GET and \$_POST superglobal arrays. (08 Marks)
 b. How do you read or write a file on the server from PHP? Give example. (08 Marks)

OR

- 8 a. Write a PHP program to create a class STUDENT with the following specification.
 Data members : Name, Roll number, Average marks
 Member function : Read(getters) and write (setters)
 Use the above specification to read and print the information of 2 students. (08 Marks)
 b. How do you achieve data encapsulation in PHP? Give example. (08 Marks)

Module-5

- 9 a. What are HTTP cookies? How do you handle them in PHP? (08 Marks)
 b. Why is state is a problem for web applications? Explain. (08 Marks)

OR

- 10 a. What does \$() short and stand for in JQuery? Explain any 3 JQuery form selectors. (08 Marks)

b. Write DTD for the following XML code.
 <?XML version = "1.0" encoding = "ISO-8859-1"?>
 <art>
 <painting id = "290">
 <title> Balcony </title>
 <artist>
 <name> Manet </name>
 <nationality> France </nationality>
 </artist>
 <year> 1868 </year>
 <medium> oil on canvas </medium>
 </painting>
 </art>

(08 Marks)

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15CS72

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019

Advanced Computer Architecture

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. List the performance factors and system attributes. Explain how performance factors are influenced by system attributes. (08 Marks)
b. Explain the architecture of vector super computer with neat diagram. (08 Marks)

OR

- 2 a. What are the conditions of parallelism? Explain the types of data dependence. (06 Marks)
b. What are the metrics affecting scalability of a computer system? (06 Marks)
c. What are the important characteristics of parallel algorithms? (04 Marks)

Module-2

- 3 a. What are the characteristic of CISC and RISC architecture? (04 Marks)
b. What are the virtual memory models for multiprocessor system? (04 Marks)
c. Explain address translation mechanism using TLB and page table. (08 Marks)

OR

- 4 a. Explain typical superscalar RISC processor architecture. (08 Marks)
b. Explain inclusion, coherence and locality properties. (08 Marks)

Module-3

- 5 a. What is arbitration? Explain different types of arbitration. (08 Marks)
b. Explain sequential and weak consistency models. (08 Marks)

OR

- 6 a. What are the different techniques for branch prediction? Explain. (08 Marks)
b. Explain multiply pipeline design to multiply two 8-bit integers. (08 Marks)

Module-4

- 7 a. Explain routing in omega network. (08 Marks)
b. What are different vector – access memory schemes? Explain any two of them. (08 Marks)

OR

- 8 a. What are the implementation models of SIMD? Explain them. (08 Marks)
b. Explain four context-switching policies. (08 Marks)

Module-5

- 9 a. What are the issues in using shared-variable model? (08 Marks)
b. Explain different phases of parallelizing compiler with a diagram. (08 Marks)

OR

- 10 a. Explain testing algorithm for dependence testing. (08 Marks)
b. What are the principles of synchronization mechanisms? Explain them. (08 Marks)

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15CS73

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019

Machine Learning

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. Specify the learning task for 'A checkers learning problem'. (03 Marks)
- b. Discuss the following with respect to the above,
 - (i) Choosing the training experience.
 - (ii) Choosing the target function and
 - (iii) Choosing a function approximation algorithm. (09 Marks)
- c. Comment on the issues in machine learning. (04 Marks)

OR

- 2 a. Write candidate elimination algorithm. Apply the algorithm to obtain the final version space for the training example. (10 Marks)

Sl. No.	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

- b. Discuss about an unbiased Learner. (06 Marks)

Module-2

- 3 a. What is a decision tree & discuss the use of decision tree for classification purpose with an example. (08 Marks)
- b. Write and explain decision tree for the following transactions: (08 Marks)

Tid	Refund	Marital status	Taxable Income	Cheat
1	Yes	Single	125 K	No
2	No	Married	100 K	No
3	No	Single	70 K	No
4	Yes	Married	120 K	No
5	No	Divorced	95 K	Yes
6	No	Married	60 K	No
7	Yes	Divorced	220 K	No
8	No	Single	85 K	Yes
9	No	Married	75 K	No
10	No	Single	90 K	Yes

OR

- 4 a. For the transactions shown in the table compute the following :
 - (i) Entropy of the collection of transaction records of the table with respect to classification.
 - (ii) What are the information gain of a_1 and a_2 relative to the transactions of the table? (08 Marks)

Instance	1	2	3	4	5	6	7	8	9
a_1	T	T	T	F	F	F	F	T	F
a_2	T	T	F	F	T	T	F	F	T
Target class	+	+	-	+	-	-	-	+	-

- b. Discuss the decision learning algorithm. (04 Marks)
- c. List the issues of decision tree learning. (04 Marks)

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Module-3

- 5 a. Draw the perceptron network with the notation. Derive an equation of gradient descent rule to minimize the error. (08 Marks)
- b. Explain the importance of the terms : (i) Hidden layer (ii) Generalization (iii) Overfitting (iv) Stopping criterion (08 Marks)

OR

- 6 a. Discuss the application of Neural network which is used for learning to steer an autonomous vehicle. (06 Marks)
- b. Write an algorithm for back propagation algorithm which uses stochastic gradient descent method. Comment on the effect of adding momentum to the network. (10 Marks)

Module-4

- 7 a. What is Bayes theorem and maximum posterior hypothesis? (04 Marks)
- b. Derive an equation for MAP hypothesis using Bayes theorem. (04 Marks)
- c. Consider a football game between two rival teams: Team 0 and Team 1. Suppose Team 0 wins 95% of the time and Team 1 wins the remaining matches. Among the games won by team 0, only 30% of them come from playing on teams 1's football field. On the other hand, 75% of the victories for team 1 are obtained while playing at home. If team 1 is to host the next match between the two teams, which team will most likely emerge as the winner? (08 Marks)

OR

- 8 a. Describe Brute-force MAP learning algorithm. (04 Marks)
- b. Discuss the Naïve Bayes classifier. (04 Marks)
- c. The following table gives data set about stolen vehicles. Using Naïve bayes classifier classify the new data (Red, SUV, Domestic) (08 Marks)

Table

Color	Type	Origin	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

Module-5

- 9 a. Write short notes on the following:
 (i) Estimating Hypothesis accuracy.
 (ii) Binomial distribution. (08 Marks)
- b. Discuss the method of comparing two algorithms. Justify with paired to tests method. (08 Marks)

OR

- 10 a. Discuss the K-nearest neighbor language. (04 Marks)
- b. Discuss locally weighted Regression. (04 Marks)
- c. Discuss the learning tasks and Q learning in the context of reinforcement learning. (08 Marks)

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15CS744

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.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 are major differences between ANSI C and K and R C? Explain with examples. (08 Marks)
- b. Mention the prototypes of sysconf, pathconf, and fpathconf functions. Write a program to demonstrate querying of limits by using above functions. (08 Marks)

OR

- 2 a. Differentiate between ANSI C and C++. (03 Marks)
- b. Explain the ANSI C CPP symbols. And also write a program to demonstrate these symbols. (05 Marks)
- c. Define API. Explain the common characteristic of APIs. (08 Marks)

Module-2

- 3 a. With a neat diagram, explain how UNIX Kernel supports for file manipulation. (10 Marks)
- b. Explain the following APIs. i) lseek iii) access. (06 Marks)

OR

- 4 a. What is the relationship between file stream pointer and file descriptor? Which functions are used to convert them one from each other and mention their prototypes. (06 Marks)
- b. Explain fcntl API. Give an example to demonstrate file locking using fcntl API. (10 Marks)

Module-3

- 5 a. Explain with a neat diagram, how a process can be initiated and how it can be terminated. (08 Marks)
- b. Explain wait and waitpid APIs with their prototype. Mention the differences between wait and waitpid. (08 Marks)

OR

- 6 a. Explain setjmp and longjmp APIs, with an example. (08 Marks)
- b. Explain BSDs job control mechanism with a neat diagram. (08 Marks)

Module-4

- 7 a. Explain sigaction API with a demonstrating program. (08 Marks)
- b. What are daemon processes? Explain with a neat diagram the error logging facility for a daemon process. (08 Marks)

OR

- 8 a. Write a C/C++ program to show the use of alarm API. (06 Marks)
- b. Explain daemon characteristics and coding rules. (10 Marks)

Module-5

- 9 a. What are pipes? Explain different ways to view a half-duplex pipe. Write a program to send data from parent process to child process using pipes. (08 Marks)
- b. What is a FIFO? With a neat diagram explain client server communication using a FIFO. (08 Marks)

OR

- 10 a. Explain message queue APIs with their prototypes. (08 Marks)
- b. Explain semctl and semop APIs with their prototypes. (08 Marks)

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15IS753

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019 Information Management System

Time: 3 hrs.

Max. Marks: 80

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

Module-1

- 1 a. How can you classify business as a system? Explain. (06 Marks)
b. List the competitive forces that business need to confront and explain the strategies that can be implemented to overcome them. (10 Marks)

OR

- 2 a. What is an Information System? Explain the evolution of IS and its impact on the users. (08 Marks)
b. What is a virtual company? List the basic business strategies of virtual companies. (06 Marks)
c. What is a cybernetic system? Give an example. (02 Marks)

Module-2

- 3 a. Explain the major components for targeted marketing in e-commerce. (06 Marks)
b. State the objectives of CIM. (03 Marks)
c. Briefly explain the following marketing systems (07 Marks)
 - Interactive Marketing
 - Sales force automation.

OR

- 4 a. What is a Transaction Processing System? Explain the stages of Transaction processing cycle. (07 Marks)
b. With example, explain financial management systems. (06 Marks)
c. List and describe the essential accounting system used in business. (03 Marks)

Module-3

- 5 a. What is ERP? Explain its benefits and challenges. Also list the costs associated with the implementation of ERP. (10 Marks)
b. Write a note on the trends in CRM. (06 Marks)

OR

- 6 a. With a neat diagram, explain the trends in SCM. (06 Marks)
b. Explain the major application clusters in CRM. (06 Marks)
c. What is SCM? Explain the roles and activities of SCM. (04 Marks)

Module-4

- 7 a. Describe the term e-commerce. List and explain the different e-commerce success factors. (08 Marks)
b. With a neat diagram, explain the electronic payment systems. (08 Marks)

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OR

- 8 a. Explain the web store requirements to host an e-commerce establishment. (10 Marks)
b. List and describe the various e-commerce market places used by business. (06 Marks)

Module-5

- 9 a. What are the different attributed that determine information quality? Explain. (09 Marks)
b. Define the term Artificial Intelligence (AI). Explain the various application areas of AI. (07 Marks)

OR

- 10 a. Explain the major application categories of Expert system with examples. (10 Marks)
b. Explain the analytical Modeling activities involved in the use of DSS. Give proper examples for each. (06 Marks)

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15CS754

Seventh Semester B.E. Degree Examination, Dec.2018/Jan.2019 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. What is a data center? Explain key characteristics of data center elements with diagram. (08 Marks)
- b. What is a file system? Explain the process of mapping user files to the disk storage. (08 Marks)

OR

- 2 a. What is RAID? Explain the RAID levels with reference to nested RAID, RAID3, RAID5 with neat diagram. (08 Marks)
- b. With neat diagram, explain the structure of read and write operations with cache. (08 Marks)

Module-2

- 3 a. Explain FC connectivity options with relevant diagram. (08 Marks)
- b. Explain block-level storage virtualization with neat diagram. Explain VSAN in brief. (08 Marks)

OR

- 4 a. What is FCoE? Explain the components of FCoE with neat diagram. (08 Marks)
- b. What is NAS? Explain the benefits of NAS. (08 Marks)

Module-3

- 5 a. What is business continuity? Explain the BC Terminology in detail. (08 Marks)
- b. Explain Backup and Restore operations with neat diagram. (08 Marks)

OR

- 6 a. What is data deduplication? Explain the implementation of data deduplication. (08 Marks)
- b. Explain Synchronous + Asynchronous and Synchronous + Disk Buffered methods of three-site replication with neat diagram. (08 Marks)

Module-4

- 7 a. What is cloud computing? Explain the characteristics and benefits of cloud computing? (08 Marks)
- b. Explain the various cloud service models available. (08 Marks)

OR

- 8 a. Explain the public cloud and private cloud deployment models in cloud computing. (08 Marks)
- b. Explain the cloud computing infrastructure in detail. (08 Marks)

Module-5

- 9 a. Explain FC SAN security architecture with neat diagram. (08 Marks)
- b. Explain the concept of Kerberos with neat diagram. (08 Marks)

OR

- 10 a. Explain the storage management activities in detail. (08 Marks)
- b. Explain Information Lifecycle Management (ILM) in detail with challenges. (08 Marks)

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