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SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

BE - SEMESTER–VII • MID SEMESTER-I EXAMINATION – WINTER 2018

SUBJECT: BIG DATA ANALYTICS (2171607) (I.T)

DATE: 6/8/2018 TIME: 10.00 AM to 11.30 AM TOTAL MARKS: 40

Instructions:
1. All the questions are compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q.1 (a) What are the benefits of big data ? Discuss challenges under big data. How big data analytics Can be useful in development of smart cities. [05]

(b) Explain working of following phases of Map Reduce with one common example. (i) Map Phase (ii) Combiner Phase (iii) Shuffle and Sort Phase (iv) Reducer Phase [05]

Q.2 (a) What are the advantages of Hadoop ? Explain Hadoop Architecture and its Components With proper diagram. [06]

(b) What is Data Serialization in Hadoop? Explain. [05]

(C) Explain Moving data In and Out of Hadoop. [04]

OR

Q.2 (a) Explain Four V's of big data. [06]

(b) Explain HDFS architecture. [05]

(c) Explain How to build Applications with zookeeper. [04]

Q.3 (a) Explain storage mechanism in HBase. Compare row oriented and column oriented database structures. [06]

(b) Differentiate : Apache pig Vs Map reduce. [05]

(c) Explain HIVE architecture. [04]

OR

Q.3 (a) Explain Client server architecture of Zookeeper. [06]

(b) Explain Apache Pig architecture and its components. [05]

(c) Explain meta store in Hive. [04]

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SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

BE - SEMESTER–VII • MID SEMESTER-I EXAMINATION – WINTER 2018

SUBJECT: DDBMS (2170714) (CE/IT)

DATE: 06/08/2018 TIME: 10:00 AM TO 11.30 AM TOTAL MARKS: 40

Instructions: 1. All the questions are compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q.1	(a)	Define Distributed DBMS? Explain promises of DDBMS.	[05]
	(b)	List all and briefly explain any two transparencies for DDBS environment.	[05]
Q.2	(a)	What are the major Distributed DBMS components? Explain each in detail with proper diagram.	[06]
	(b)	Explain following in context of Relational algebra: 1. Selection 2. Projection 3. Natural Join.	[05]
	(c)	Explain shared disk and shared memory multiprocessor system with neat sketches.	[04]
		OR	
Q.2	(a)	Explain Client/Server Reference architecture of DDBMS with proper diagram.	[06]
	(b)	State the need of normalization in database management system. Explain 3rd and BCNF Normal Form.	[05]
	(c)	Explain Loosely Coupled and Tightly Coupled system.	[04]
Q.3	(a)	Write a detailed note on horizontal fragmentation and Vertical fragmentation with example.	[06]
	(b)	Explain layers of query processor.	[05]
	(c)	Draw block diagram of top-down design process and explain.	[04]
		OR	
Q.3	(a)	What is fragmentation? Why it is needed? What are the correctness rules for fragmentation?	[06]
	(b)	Briefly describe the characterization of query processors.	[05]
	(c)	Write a short note on hybrid fragmentation.	[04]

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BE - SEMESTER–VII• MID SEMESTER-I EXAMINATION – WINTER 2018

SUBJECT: INFORMATION AND NETWORK SECURITY (2170709) (CE/IT)

DATE: 7/8/2018 TIME: 10:00 AM to 11:30 AM TOTAL MARKS: 40

Instructions: 1. All the questions are compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q.1	(A)	Define: data confidentiality, data authentication, data integrity.	[03]
	(B)	Explain confusion and diffusion.	[03]
	(C)	Explain mono alphabetic cipher with example.	[04]
Q.2	(A)	Explain RSA algorithm.	[06]
	(B)	Explain playfair cipher in detail. Find out cipher text for the following given plain text and key. Key = SILVEROAK Plain text = PLAYFAIR	[05]
	(C)	Explain Electronic Codebook Mode (ECB) and Cipher Block Chaining (CBC) mode.	[04]

OR

Q.2	(A)	P and Q are two prime numbers. P=7, and Q=17. Take public key E=5. If plain text value is 6, then what will be cipher text value according to RSA algorithm? Explain in detail	[06]
	(B)	Explain types of attacks.	[05]
	(C)	Explain one time Pad with example.	[04]
Q.3	(A)	Explain single round of DES with the help of diagram.	[06]
	(B)	Explain Man-in-Middle attack with pictorial representation of attack scenario.	[05]
	(C)	Explain symmetric key cryptography. What are the challenges of symmetric key cryptography?	[04]

OR

Q.3	(A)	Explain various steps of AES.	[06]
	(B)	Explain Diffie - Hellman key exchange algorithm and its limitations	[05]
	(C)	Compare Public Key cryptography (Asymmetric Key Cryptography) Vs. Private key Cryptography (Symmetric Key cryptography)	[04]

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BE - SEMESTER–VII • MID SEMESTER-I EXAMINATION – WINTER 2018

SUBJECT: Mobile Computing and Wireless Communication (2170710) (CE/IT)

DATE: 10-08-2018 TIME:10:00 am to 11:30 am TOTAL MARKS:40

Instructions: 1. All the questions are compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q.1	(a)	Explain Piconet and Scatternet.	[03]
	(b)	Explain Snooping TCP in detail.	[03]
	(c)	Define channel capacity. State the key factors that affect channel capacity. Explain various Channel Capacity formula.	[04]
Q.2	(a)	Explain in detail Direct Sequence Spread Spectrum (DSSS)	[06]
	(b)	Write advantages and disadvantages of packet switching over circuit switching. Differentiate Datagram and Virtual circuit.	[05]
	(c)	Explain frequency reusing with diagram.	[04]
		OR	
Q.2	(a)	Explain various Propagation Modes with figure.	[06]
	(b)	Suppose that spectrum of a channel is between 3Mhz and 4Mhz and SNR (in dB) = 24 dB. Find the value of Channel Capacity and Signaling Level (M).	[05]
	(c)	Draw OSI protocol stack.	[04]
Q.3	(a)	Explain the Multiple Access Techniques (FDMA,TDMA,CDMA)	[06]
	(b)	What is fading? Differentiate i. Fast and slow fading ii. Flat and selective fading.	[05]
	(c)	Explain various Transmission Media	[04]
		OR	
Q.3	(a)	Draw and Explain Bluetooth Protocol Stack	[06]
	(b)	What are the essential functional differences between 1st generation, 2nd generation and 3rd generation of networks?	[05]
	(c)	Describe Coding and Error control in brief.	[04]

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SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

BE - SEMESTER–VII • MID SEMESTER-I EXAMINATION – WINTER 2018

SUBJECT: DATA MINING AND BUSINESS INTELLIGENCE (2170715) (CE\IT)

DATE: 13/08/2018 TIME: 10:00 AM TO 11:30 AM TOTAL MARKS: 40

Instructions:
1. All the questions are compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q.1	(a)	Explain the following terms: 1. Data Mining 2. Data Warehouse 3. Data Mart	[3]
	(b)	What is Metadata in the data warehouse?	[3]
	(c)	Explain the KDD process in details.	[4]
Q.2	(a)	Explain Star, Snowflake, Fact Constellation Schema for Multidimensional Database.	[6]
	(b)	Explain three-tier data warehouse architecture.	[5]
	(c)	Differentiate between OLTP and OLAP systems.	[4]

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Q.2	(a)	Explain various OLAP Operations on Data Cube with example.	[6]
	(b)	List and describe the methods for handling the missing values in data cleaning.	[5]
	(c)	Do feature wise comparison between BI and DW.	[4]
Q.3	(a)	What is noise? Explain data smoothing methods as noise removal technique to divide given data into bins of size 3 by bin partition (equal frequency), by bin means, by bin medians and by bin boundaries. Consider the data: 10, 2, 19, 18, 20, 18, 25, 28, 22	[6]
	(b)	What is BI? Explain its importance.	[5]
	(c)	List down Different databases and Explain any two with example.	[4]

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Q.3	(a)	Suppose that the data for analysis includes the attribute age. The age values for the data tuples are (in increasing order): 13, 15, 16, 16, 19, 20, 23, 29, 35, 41, 44, 53, 62, 69, 72 i) Use min-max normalization to transform the value 45 for age	[6]

onto the range [0:0, 1:0]
ii) Use z-score normalization to transform the value 45 for age, where the standard
deviation of age is 20.64 years.

(b) Explain the major issues in Data Mining [5]

(c) Enlist and Explain different OLAP servers. [4]