

KRISHNA KANTA HANDIQUI STATE OPEN UNIVERSITY
Hiranya Chandra Bhuyan School of Science and Technology

HOME ASSIGNMENT FOR
MASTER OF COMPUTER APPLICATIONS (MCA)
FOURTH SEMESTER, 2017

N.B. The learners will have to collect receipt after submitting the assignment with the signature and seal of the collector of study centre and will have to keep with him/her till the declaration of result.

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Receipt

Received the assignment from Mr/MsEnrollment number
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Date:

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**COURSE: DATABASE MANAGEMENT SYSTEMS
(MCA-13)**

Total Marks: 50

[Assignments are required to be written in your own language. Copying into from the learning materials will carry less score]

A. Answer the following three questions: 2 X 3 = 6

- Q1. What are insertion, deletion and update anomalies?
- Q2. Differentiate among primary key, candidate key, superkey and foreign key.
- Q3. Define functional dependency. What are its types?

B. Answer the following three questions: 4 X 3 = 12

- Q1. Describe the three different cardinality relationships.
- Q2. Explain transaction states with the help of state transition diagram.
- Q3. Describe in brief the ACID properties of transaction?

C. Answer the following two questions: 6 X 2 = 12

- Q1. Define normalization. Give the rules for a table to be in 1NF to 5NF.
- Q2. What do you mean by entity integrity and referential integrity constraints? Explain with suitable example.

D. Answer the following two questions: 10 X 2 = 20

Q1. Consider the following relations: (5+3+2=10)

Student(rollno, sname, addr, phno)
Lib_Books(bookid, bookname, author, price)
Reads(rollno, bookid, date_issue, date_return)

Write SQL statements for the following:

- (i) Create the tables. Identify the keys and foreign keys.
- (ii) Display the number of times a book has been read.
- (iii) Display the name of books which have price less than Rs 500.

Q2. Briefly explain the rules of Codd.

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**COURSE: MANAGEMENT INFORMATION SYSTEMS
(MCA-14)**

Total Marks: 50

[Assignments are required to be written in your own language. Copying in toto from the learning materials will carry less score]

A. Answer the following three questions:

2 X 3 = 6

Q1. What is On-Demand report?

Q2. Define Data Conferencing?

Q3. Define virtual organization?

B. Answer the following three questions:

4 X 3 = 12

Q1. How is a new Internet business planned?

Q2. What do you understand by organizational designing?

Q3. Describe in brief the concept of video conferencing and teleconferencing.

C. Answer the following two questions:

6 X 2 = 12

Q1. What is the importance of enterprise resource planning system in a business organization?

Q2. Briefly describe the development process of the information system.

D. Answer the following two questions:

10 X 2 = 20

Q1. What is CRM? Discuss the benefits and types of CRM.

Q2. Explain the uses of intranet as well as the applications of extranet.

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**COURSE: DATA COMMUNICATION AND COMPUTER NETWORKS
(MCA-15)**

Total Marks: 50

[Assignments are required to be written in your own language. Copying in to from the learning materials will carry less score]

A. Answer the following three questions: 2 X 3 = 6

- Q1. What is phase modulation?
- Q2. Give two applications of optical fiber.
- Q3. Differentiate between IPv4 and IPv6.

B. Answer the following three questions: 4 X 3 = 12

- Q1. What are the responsibilities of the network layer in the OSI model?
- Q2. Explain briefly the difference between virtual circuits and datagram subnets.
- Q3. Explain briefly the different IP address classes.

C. Answer the following two questions: 6 X 2 = 12

- Q1. Write a short note on TCP congestion control.
- Q2. Discuss about link state routing algorithm detail.

D. Answer the following two questions: 10 X 2 = 20

- Q1. Explain the TCP three-way handshake mechanism.
- Q2. Describe the frame format for IEEE 802.3 MAC frame. What are the salient features of FDDI network?

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**COURSE: SYSTEM SOFTWARE
(MCA-16)**

Total Marks: 50

[Assignments are required to be written in your own language. Copying in toto from the learning materials will carry less score]

A. Answer the following three questions:

2 X 3 = 6

- Q1. Give two functions of preprocessor.
- Q2. Define syntax tree? How is it created?
- Q3. Define one pass assemblers.

B. Answer the following three questions:

4 X 3 = 12

- Q1. What are the different levels in Chomsky hierarchy?
- Q2. Differentiate between top down and bottom up parsing.
- Q3. Distinguish between a linker and a loader with the help of examples.

C. Answer the following two questions:

6 X 2 = 12

- Q1. Explain in brief the functions of a linker.
- Q2. Consider the grammar
 $S \rightarrow aSbS \mid bSaS \mid \epsilon$
 - i) Construct the parse tree for aab.
 - ii) What language is this grammar generator?

D. Answer the following two questions:

10 X 2 = 20

- Q1. Explain the phases related to a compiler.
- Q2. Explain the concept of non-deterministic finite automata.

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