M.E. Computer Engg.

Master Of Engineering

Question Papers May-June 2019

Sem – I & II

ME-COMP/ SEM-II Choice based / 23/05/2019.

(Time: 3 Hours) [Total Marks 80]

N. B:
1. Question No. 1 is Compulsory.
2. Solve any THREE from Question No. 2 to 6.
3. Draw neat well labeled diagram wherever necessary.

Q. 1 a) Discuss in detail SISD, SIMD, MISD, MIMD, SIMT, SPMD, MPMD. (10)

b) Write a MPI program to find sum of N numbers. (10)

Q. 2 a) Derive the expression for speedup and efficiency by Amdahl's law and comment on the same. Assume suitable data if required. (10)

b) Discuss different levels of parallel processing. (10)

Q. 3 a) Explain about process synchronization mechanism with Semaphore. (10)

b) Define MPI. Explain in detail principles of Message Passing Programming. (10)

Q. 4 a) Explain in brief Quantum Computers. (10)

b) Define CUDA? Explain in CUDA processor architecture. (10)

Q. 5 a) Explain speedup, efficiency and scalability with suitable example. (10)

b) Explain in detail Architecture of NVIDIA GPU. (10)

Q. 6 Write short note on the following: (20)

1. Nanotechnology
2. Grain packing and scheduling in parallel processing
3. Data Race
4. OpenMP

ME COMP SEM - II CHOICE BASED Date 27/05/19 Q.P. Code: 40829

Time: 03 Hours **Marks: 80**

Note: 1. Question 1 is compulsory

2. Answer any three out of remaining questions.
3. Assume suitable data wherever required and justify the same.

Q1 a) Describe how logistic regression can be used as a classifier. [5]

b) Explain cross-validation for accuracy estimation. [5]

c) What is data journalism? [5]

d) What is data leakage with respect to big data? [5]

Q2 a) What is type I and type II errors in hypothesis testing? Is one always more serious than the other? Why? [10]

b) Describe the working of the Map-Reduce with an example. [10]

Q3 a) Explain Gaussian (normal) distribution with respect to pdf and cdf and its use in statistics. [10]

b) Explain time series mining with an appropriate example. [10]

Q4 a) You have collected a data of about ten thousand rows of tweet text. With help of text mining how you will create a tweet classification model that categorizes each of the tweets in three different classes. What could be the challenges while performing text mining to this context? [10]

b) Explain the process of content based RS with suitable example. [10]

Q5 a) Explain singular value decomposition (SVD) with an example. [10]

b) What infrastructure is most appropriate for Hadoop? Draw and describe Hadoop Ecosystem Architecture. [10]

Q6 a) Given $S = \begin{matrix} 1 & -1 \\ 0 & 1 \\ -1 & 0 \end{matrix}$ [10]

Find principal components.

b) Draw and describe the information visualization process. [10]

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15/05/19

[redacted] (Sem II) M.E. (COMP) Choice Base

Time: 3 Hours **Total Marks: 80**

N.B.: (1) Question No.1 is compulsory.
(2) Attempt any three questions from the remaining five questions.
(3) Make suitable assumptions wherever necessary but justify your assumptions.

1. (a) What is cybercrime? How do we classify cybercrimes? **05**
   (b) Justify the need of 'Forensic Duplication' in digital forensics. **05**
   (c) Explain need of volatile data collection during digital forensic. **05**
   (d) Explain tools & commands for following operations **05**
   I. To know failed console login.
   II. To dump registry.
   III. To transfer data from victim machine to forensics system.
   IV. To know failed remote login.
   V. To identify hidden files.

2. (a) What are the procedures to be adhered to while handling evidence during an investigation? **10**
   (b) What is digital evidence? How to preserve the digital evidence? Explain the role of custodian in handling digital evidence. **10**

3. (a) Briefly explain the process of collecting the volatile data in Unix system. **10**
   (b) Explain handling & recovering mechanism of DoS attack. **10**

4. (a) What are the requirements of forensic duplication tools? Elaborate different ways of creating a forensic duplicate of a hard-disk. **10**
   (b) Describe in detail about uses of tool in E-mail Forensics. **10**

5. (a) Discuss in details pre Incident preparation in organization. **10**
   (b) Briefly explain the role of Windows registry in collecting forensic evidence. **10**

6. Write a short note on: **(any two)** **20**
   (a) Chain of Custody.
   (b) Guidelines for Writing a Report.
   (c) SNORT.

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ME| Comp| Sem-II| Chqra based 17/5/2019

(3 Hours)

[Total Marks: 80]

Note: i) Question no. 1 is compulsory
ii) Attempt any three from remaining
iii) Assume necessary data

1.	(a)	Explain the characteristics of ontology.	5
	(b)	Explain node edge diagram for visualizing social networks.	5
	(c)	What are advantages of RDF as compared to XML.	5
	(d)	What are the business applications of social network analysis?	5
2.	(a)	Discuss the core methods of community discovery in social networks.	10
	(b)	Explain Web ontology language and modeling social network data.	10
3.	(a)	Explain ontology engineering process in detail.	10
	(b)	Evaluate the concept of matrix and node link diagram with their advantages and disadvantages.	10
4.	(a)	Explain open academia in detail.	10
	(b)	Explain in detail about layered architecture of semantic web stack.	10
5.	(a)	Explain Modeling and Aggregating of social Network data.	10
	(b)	Explain the different types of visualizations for social networks.	10
6.		Write short note on (**any Two**)	20

a) Social Network Analysis techniques
b) Recommendation systems
c) clustering

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21/05/2019

ME (computer) / sem-II / choice Based

(Three Hours) **Total Marks: 80**

Instructions:

- Attempt any four questions out of six questions
- Assume suitable data wherever necessary
- Figures to the right indicate full marks.

Q.1 Answer any Four. 20

a. Role of SPSS in data analysis
b. Foot notes and Bibliography
c. Importance of t-tests
d. Descriptive statistics
e. Testing of hypothesis
f. Non-parametric tests

Q.2 a. What is the research methodology? Explain the steps in scientific research process. Briefly explain about literature review. 10

b. State the sources of research problem. How a problem is identified? Enumerate the criteria for the selection of a problem. 10

Q.3 a. Explain the concept of attitude scale. Explain the Likert's scale to measure data attitude. 10

b. Explain Quantitative vs. Qualitative type of research. Explain Post Facto research and Motivation in research. 10

Q.4 a. Explain critically interpretation and Organization of the data. 10

b. Hypothesis is a statement which involves a relationship of variable. Enumerate the types of variables included in stating a hypothesis. 10

Q.5 a. What are the characteristics of research? What are the factors affecting research design? 10

b. "A systematic bias results from errors in the sampling procedures". What do you mean by such a systematic bias? Describe the important causes responsible for such a bias. 10

Q.6 a. What are the differences between observation and interviewing as methods of data collection? Explain with two specific examples of situations where either observation or interviewing would be more appropriate. 10

b. You have been asked to research setting up of a roadside hotel. Design a questionnaire to find out the prospects of proceeding with the venture. 10

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