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**T.E. - (IT) (Sem-VI) (Revised Course 2019-2020)**

**EXAMINATION JANUARY 2024**

**Computer Forensics & Cyber Security (OPEN ELECTIVE)**

**[Time: 3 Hours]**

**[Max. Marks: 100]**

**Instructions:** *Answer any five questions by selecting two questions from Part-A and two from Part-B and one question from Part-C.*

***Part A***

- Q1
- a. Explain digital evidence bags. [6]
  - b. Discuss the key elements needed for a Successful data backup. [8]
  - c. Is the statement, "*When collecting evidence, you should always try to proceed from the most volatile evidence to the least.*" correct? Justify your answer. [6]
- Q2
- a. Once the data has been collected from the crime scene, it must be protected from contamination. As a computer forensic expert, demonstrate how you will ensure that. [6]
  - b. List and explain the various Computer Forensics Services. [8]
  - c. Explain different types of evidence. [6]
- Q3
- a. Discuss Trackable Electronic Documents and its creation. [6]
  - b. Define Computer forensics. State and explain how it can be used in Law enforcements. [8]
  - c. Identify the concerns of an investigator whilst preserving the digital crime scene. [6]

**Part B**

- Q4 a. Is ethical hacking the need of today's society? Justify. [6]  
 b. List the various countermeasures against ping sweeping and port scanning. [8]  
 c. Summarize the various types of hackers. [6]
- Q5 a. Discuss reverse social engineering. [6]  
 b. Is the statement, "*The amount of information you can gather about an organization's business and information systems from the Internet is staggering.*" correct? Justify your answer. [8]  
 c. Summarize the security vulnerabilities of wireless workstations. [6]
- Q6 a. Is the statement "*Social Engineering is synonymous to People Hacking.*", true? Justify your answer. [6]  
 b. Explain grabbing banners and list out countermeasures against banner grabbing attack. [8]  
 c. Discuss MAC address spoofing. [6]

**Part C**

- Q7 a. Summarize how theft recovery software can find stolen laptops and PCs. [6]  
 b. Explain techniques in cracking passwords using social engineering and the corresponding counter measures. [8]  
 c. Discuss Dumpster diving. [6]
- Q8 a. Write short notes on: [4\*5=20]  
     i. WHOIS  
     ii. Dictionary attacks  
     iii. Scanning your local airwaves  
     iv. Intelligent forensic filter

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**T.E - (IT) (Sem-VI)(Revised Course 2019-2020)**  
**EXAMINATION JANUARY 2024**  
**Technical English & Report Writing**

[Time: 03 Hours]

[Max. Marks:100]

- Instructions:**
- 1) The paper has 3 Part-A, B and C.
  - 2) Attempt **two** Questions from **Part-A** and **Part-B** each.
  - 3) Attempt **any one** question from **Part-C**

**PART-A**

Attempt any two questions from the following.

(2x20=40)

- Q1
- a) You are listening to a structured talk. Elaborate on the skills you would need to provide for an oral discovers analysing and the talk. (10)
  - b) Explain two aspect of a Job-Interview” (10)
    - i) Interview preparation
    - ii) Types of question asked.
- Q2
- a) Explain how making judgement, lack of empathy are barriers to listening. Also provide two effective solutions for the same. (10)
  - b) “All the great speakers were bad speakers at first”. Elaborate on the implicit meaning of the massage and provide six tips of for effective speaking. (10)
- Q3
- a) You have launched your product in the market. To take feedback of the same, three strategies are bed-face to face communication, Questionnaires and telephonic communication. State the advantage and disadvantages of each of them. (10)
  - b) Explain the following aspects of a group discussion. (10)
    - i) Leadership skills
    - ii) Team skills

**PART-B**

Attempt any two of the following

(2x20=40)

- Q4
- a) Define ‘Reading’ elaborate on scanning, skimming and intensive reading a strategy to be and effective reader. (10)
  - b) You are a resident of Nilgiri Co-operative housing society. Draft a complaint letter to the builder about the poor parking facility in the locality. (10)  
(Assume relevant data wherever needed)

- Q5 a) Read the following passage and do a note taking in the format given below:

(10)

Reports from a range of scientific disciplines are telling us with certainty that we are making a mess of the earth, we are fouling our nest, and we have to act decisively and against our immediate inclinations for we tend to be superstitious, hierarchical, and self-interested just when the moment requires us to be rational, even-handed, and altruistic. We are shaped by our history and biology to frame our plans within the short term, within the scale of a single lifetime; and in democracies, governments and electorates collude in an even tighter cycle of promise and gratification. Now we are asked to address the well-being of unborn individuals we will never meet and who, contrary to the usual terms of human interaction, will not be returning the favour.

To concentrate our minds, we have historical examples of civilizations that *have collapsed through* environmental degradation—the Sumerian, the Indus Valley, Easter Island. They extravagantly feasted on vital natural resources *and we* died. Those were test-tube cases, locally confined; now, increasingly, *and we* are informed, reliably or not, that it is the whole glorious human experiment that is at risk.

Q5

a) Read the following passage and do a note taking in the format given below:

(10)

Reports from a range of scientific disciplines are telling us with certainty that we are making a mess of the earth, we are fouling our nest, and we have to act decisively and against our immediate inclinations for we tend to be superstitious, hierarchical, and self-interested just when the moment requires us to be rational, even-handed, and altruistic. We are shaped by our history and biology to frame our plans within the short term, within the scale of a single lifetime; and in democracies, governments and electorates collude in an even tighter cycle of promise and gratification. Now we are asked to address the well-being of unborn individuals we will never meet and who, contrary to the usual terms of human interaction, will not be returning the favour.

To concentrate our minds, we have historical examples of civilizations that have collapsed through environmental degradation-the Sumerian, the Indus Valley, Easter Island They extravagantly feasted on vital natural resources and died. Those were test-tube cases, locally confined; now, increasingly, we are one and we are informed, reliably or not, that it is the whole laboratory, the whole glorious human experiment that is at risk.

Title: \_\_\_\_\_

I. \_\_\_\_\_  
 a. \_\_\_\_\_  
 b. \_\_\_\_\_

II. \_\_\_\_\_  
 a. \_\_\_\_\_  
 b. \_\_\_\_\_

III. \_\_\_\_\_  
 a. \_\_\_\_\_  
 b. \_\_\_\_\_

- b)
- i) State in twenty-three word, the implicit meaning of the passage. (2)
  - ii) Why does the speaker/writer give example of civilizations? What purpose does it server? (2)
  - iii) Comment on the tone employed in the passage and the reason for it. (2)
  - iv) Provide for a synonym of the following: (2)  
Altruistic, inclination, gratification, superstitious.
  - v) Provide for 2 solutions on your own to the 'experiment' that is at risk (2)
- Q6
- a) Define formal writing and distinguish it from an informal one. Elaborate on any four feature of formal writing. (10)
  - b) Draft a memorandum an environment officer of Genova Infotech limited about measures to be taken to reduce air pollution in the vicinity. (10)

**PART-C**

**Attempt any one of the following**

**(1x20=20)**

- Q7
- a) Assume a topic and suitable data and draft the 'title page' and table of content of a report. (10)
  - b) Draft a notice and minutes of the staff meeting of Springdale's higher secondary school. (10)
- Q8
- a) Discuss briefly the different types of reporter. (10)
  - b) You are a fresh BE graduate in a branch of your own choice. Assume a suitable data and draft a resume to a prospective employer. (10)

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T.E. (IT) (Sem-VI) (Revised Course 2019-2020)

- a. Discuss the key elements involved in a successful data backup and recovery. [6]
- b. Consider a cybercrime that has taken place in your vicinity. Demonstrate the various steps taken by the Computer Forensics Specialists to solve the crime. [8]
- c. "When collecting evidence, you should always try to proceed from the most volatile to the least." Is this statement true? Justify your answer. [6]

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T.E. - (IT) (Sem-VI) (Revised Course 2019-2020)

EXAMINATION DECEMBER 2023

Computer Forensics and Cyber Security

[Time: 3:00 Hours]

[Max. Marks: 100]

*Instructions: Answer any five questions by selecting two questions from Part-A and two from Part-B and question from Part-C.*

*Part A*

Q1 a. State the importance of Computer Forensics Documentation in Solving cybercrimes. [6]

b. Define Computer Forensics. State and explain how it assists in Human Resources/Employment Proceedings. [8]

c. State the properties that the evidence must have to be useful to be presented in court for a cybercrime. [6]

Q2 a. Explain the AnaDisk Diskette Analysis Tool. [6]

b. List the services offered by the computer forensic expert. [8]

Total No. of Printed Pages: 02

**T.E. - (IT) (Sem-VI) (Revised Course 2019-2020)**

**EXAMINATION DECEMBER 2023**

**Computer Forensics and Cyber Security**

**[Time: 3:00 Hours]**

**[Max. Marks: 100]**

*Instructions: Answer any five questions by selecting two questions from Part-A and two from Part-B and question from Part-C.*

***Part A***

- Q1 a. State the importance of Computer Forensics Documentation in Solving cybercrimes. [6]
- b. Define Computer Forensics. State and explain how it assists in Human Resources/Employment Proceedings. [8]
- c. State the properties that the evidence must have to be useful to be presented in court for a cybercrime. [6]
- Q2 a. Explain the AnaDisk Diskette Analysis Tool. [6]
- b. State and explain the various services offered by the computer forensic expert. [8]
- c. Is "Electronic evidence can be very expensive to collect?" Justify your answer. [6]
- Q3 a. Discuss the key elements needed for a successful data backup and recovery. [6]
- b. Consider a cybercrime that has taken place in your vicinity. Demonstrate the various steps taken by the Computer Forensics Specialists to solve the crime. [8]
- c. "When collecting evidence, you should always try to proceed from the most volatile to the least." Is this statement true? Justify your answer. [6]

**Part B**

- Q4
- a. Summarize the consequences of DoS attacks on a computer or a network device. [6]
  - b. Define ethical hacking and elaborate on the various steps involved in ethical hacking process. [8]
  - c. List out the countermeasures against physical security problems in wireless networks. [6]
- Q5
- a. Explain Wi-Fi Protected Setup (WPS) in wireless networks. [6]
  - b. Discuss Social engineering attacks. "*It is difficult to protect against Social engineering attacks.*" Is this statement true? Justify your answer. [8]
  - c. Illustrate how divulging too many details about your information on security program or infrastructure can be used against you by the hackers. [6]
- Q6
- a. Discuss the countermeasures against vulnerable wireless workstations. [6]
  - b. Explain techniques in cracking passwords using shoulder surfing and the corresponding counter measures. [8]
  - c. Define an ethical hacker and state its overall goals. [6]

**Part C**

- Q7
- a. "User awareness and training is considered as the best defence against social engineering." Is this statement true? Justify your answer. [6]
  - b. How does port scanning tools operate? What kind of information can they give you about a live host in your network. [8]
  - c. Identify the various obstacles encountered while collecting evidence in a cyber crime scene. [6]
- Q8
- a. Who are hacktivists. How do they harm the society? [6]
  - b. Discuss data archiving in context to data recovery. [8]
  - c. Explain digital evidence bag. [6]

Total No. of Printed Pages: 3

**T.E - (IT) (Sem-VI)(Revised Course 2019-2020)**  
**EXAMINATION DECEMBER 2023**  
**Artificial Intelligence and Fuzzy Logic**

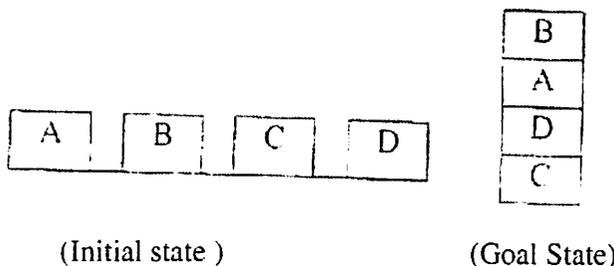
[Time: 3:00 Hours]

[Max. Marks:100]

- Instructions:**
- i. Answer five questions. At least two from Part A, two from Part B and one from Part C.
  - ii. Assume suitable data if necessary,
  - iii. Figures to right indicate full marks.

**Part –A**

- Q1
- a) Discuss the need for 'alpha-beta pruning' with a suitable example. 6
  - b) Give the steps to construct a Bayesian Network. 6
  - c) Set up the STRIPS formulation to solve the following block world problem. 8



Specify the initial state, possible actions and action plan to achieve goal state.

- Q2
- a) Compare search space traversals using Depth First search and Iterative Deepening Depth First Search Algorithms with a suitable example. 6
  - b) Consider the following axioms, using resolution prove if "Steve is happy". 8
    - i) Anyone who passes an exam or wins a lottery is happy.
    - ii) Anyone who study hard or win a lottery is happy.
    - iii) Steve did not study hard but was lucky.
    - iv) Anyone who is lucky wins a lottery.
    - v) Steve passes all exams that Joe passes.
  - c) Why partial-order planning is preferred over total order planning? Explain with the help of an example. 6

- Q3 a) For the following board state, find the optimal move for the first player using min-max algorithm. 7

X		O
	O	X
	X	O

- b) State and explain the usefulness of Baye's Rule. 6
- c) Solve the following Cryptarithmic problem using constraint satisfaction. 7

$$\begin{array}{r} \text{R O N} \\ + \text{W O N} \\ \hline \text{G O A T} \end{array}$$

**Part –B**

- Q4 a) Compare the architecture and function of the human brain with that of an artificial neural network. 6
- b) What are membership functions? Explain the various membership functions 6
- c) Explain the working of back propagation and feed forward algorithm in neural network. 8
- Q5 a) Explain the structure and working of Recurrent Neural Networks 7
- b) Outline the decision tree learning algorithms. Construct a decision tree to learn a function that predicts the good students from the bad ones based on following table. 7

Datum ID	Height	Dept.	Duration	Result
a	Tall	EECS	Yes	Good
b	Average	EECS	No	Good
c	Short	Chemistry	Yes	Bad
d	Average	Physics	Yes	Good
e	Tall	Chemistry	No	Good
f	Average	EECS	No	Bad
g	Tall	Physics	Yes	Good
h	Short	Chemistry	No	Bad

- c) Mention the applications of fuzzy logic control systems. 6
- Q6 a) Differentiate between Supervised learning and Unsupervised learning. 6
- b) Briefly explain applications of Neural Network. 7
- c) Explain the working of Convolutional Neural Network. 7

## Part –C

- 7 a) What is Learning? 2
- b) The following identities hold true for Boolean logic. Do they hold true for fuzzy logic? 6

Assume  $a=0.5$ ,  $b=0.5$ , and  $c=0.3$

- i.  $a \text{ AND } (b \text{ AND } c) = (a \text{ AND } b) \text{ AND } c$
- ii.  $a \text{ AND } (b \text{ OR } c) = (a \text{ AND } b) \text{ OR } (a \text{ AND } c)$
- iii.  $\text{NOT} (\text{NOT } a) = a$
- c) Explain A\* algorithm with the help of an example. 6
- d) Consider the problem of Air Cargo Transport. Give the STRIPS representation for the problem. 6

- a) What is perceptron? Design Boolean functions(AND and OR) with suitable weight using perceptron. 7
- b) Briefly explain Fuzzification and Defuzzification? 7
- c) An art competition has entries from 3 painters Jai, Roy and Priya. 6

Jai put in 15 painting, 4% of his works won first place.

Roy put in 15 painting, 6% of his works won first place

Priya put in 10 painting, 3% of her works won first place.

Use Baye's Rule to find the probability of Jai winning First place.

**Part –C**

- Q7 a) What is Learning? 2
- b) The following identities hold true for Boolean logic. Do they hold true for fuzzy logic? 6
- Assume  $a=0.5$ ,  $b=0.5$ , and  $c=0.3$
- i.  $a \text{ AND } (b \text{ AND } c) = (a \text{ AND } b) \text{ AND } c$
- ii.  $a \text{ AND } (b \text{ OR } c) = (a \text{ AND } b) \text{ OR } (a \text{ AND } c)$
- iii.  $\text{NOT} (\text{NOT } a) = a$
- c) Explain A\* algorithm with the help of an example. 6
- d) Consider the problem of Air Cargo Transport. Give the STRIPS representation for the problem. 6
- Q8 a) What is perceptron? Design Boolean functions(AND and OR) with suitable weight using perceptron. 7
- b) Briefly explain Fuzzification and Defuzzification? 7
- c) An art competition has entries from 3 painters Jai, Roy and Priya. 6
- Jai put in 15 painting, 4% of his works won first place.  
 Roy put in 15 painting, 6% of his works won first place  
 Priya put in 10 painting, 3% of her works won first place.  
 Use Baye's Rule to find the probability of Jai winning First place.

Total No. of Printed Pages: 2

T.E - (IT) (Sem-VI)(Revised Course 2019-2020)  
EXAMINATION DECEMBER 2023  
Web Technology

[Time: 3 Hours]

[Max. Marks:100]

**Instructions:** 1. Answer any five questions with at least two questions from PART A, two questions from PART B and One question from PART C.

**PART A**

- Question 1**
- a. Describe the different types of Web Browsers with examples (06)
  - b. Create an HTML web page that describes you. Your webpage should include the following (08)
    - i. Table
    - ii. Links
    - iii. Image
    - iv. Lists
  - c. Design a boat ride registration form using any five different HTML 5 input elements of your choice (6)
- Question 2**
- a. Explain and demonstrate string concatenation using += in JavaScript with a suitable program. Show the output (6)
  - b. Explain and demonstrate javascript function to display a time based greeting with relevant code. (6)
  - c. Demonstrate and describe how to hide the paragraph element when a click event fires using jQuery click() method. (8)
- Question 3**
- a. Create a DTD and XML schema for the XML shown below: (06)

```
<?xml version="1.0" encoding="utf-8"?>
<Goa guide="Peter">
<Title>Goa Tour Guide</Title>
<guide id="1">North Goa </guide>
<guide id="2">South Goa </guide></Goa>
```

- b. Discuss and Demonstrate the jQuery mouseenter() and mouseleave() methods using relevant code. (08)
- c. Describe how functions are used as Variable Values with an example code (06)

**PART B**

- Question 4**
- a. Discuss the datatypes in Javascript with suitable examples. (08)
  - b. Demonstrate how to round the number 4.7 and generate a random number using Javascript. Display the output: (04)
  - c. Describe different types of looping statements in PHP. (08)
- Question 5**
- a. Describe the GridView Control (05)
  - b. Write a short note on the FormView Control (05)
  - c. Explain the ListView Control (05)
  - d. Discuss the Menu Control (05)
- Question 6**
- a. Demonstrate using a PHP program how to assign a value to a variable using the assign by Reference Method. Show the output. (07)
  - b. Demonstrate string manipulation functions in PHP for the following (08)
    - 1. Getting the length of a string
    - 2. Splitting the string into an Array
    - 3. Finding the position of a string in another string
    - 4. Repeating the same string many times
  - c. Explain and write a code in PHP to validate a given date Show the output. (5)

**PART C**

- Question 7**
- a. Demonstrate the text-decoration-style property of CSS and display the output (6)
  - b. Explain the font property of CSS. (8)
  - c. Write an HTML5 code to display the input type range and show the output (6)
- Question 8**
- a. Discuss the Merits of Javascript (08)
  - b. Explain primitive data types in PHP (08)
  - c. Describe the range validator control (04)

Total No. of Printed Pages: 4

T.E. - (I.T.) (Sem-VI) (Revised Course 2019-2020)

EXAMINATION DECEMBER 2023

Principles of Compilers

[Time: 3:00 Hours]

[Max. Marks:100]

*Instructions: 1. Attempt two questions from Part-A, two questions from Part-B and one from Part-C.*

*2. Figures to the right indicate marks.*

*3. Make suitable assumptions wherever necessary.*

**Part-A**

**Answer any two questions from the following:**

- Q1 a) Differentiate between Analysis and Synthesis part of Compiler. [4]  
b) Show the output of each phase of compilation for the following C statements: - [10]  
float x = 0;  
int y = 1;  
if(x < 5.0\*y)  
x = x + y;
- c) Explain the process of Bootstrapping with the help of T-diagrams. [6]
- Q2 a) Eliminate left recursion from the following grammar:- [3]  
S -> PS | b  
P -> SP | a
- b) Construct Predictive parsing table for the following grammar:- [10]  
E->E+T|T  
T->T\*F|F  
F->(E) | id  
Parse the input string (id+id\$)
- c) Write a short note on Lex tool. [7]

- Q3 a) Define and provide an example of Token, Pattern, Lexeme in lexical analysis phase. [4]
- b) Consider the following lex program:- [6]
- ```
%{A,B%}  
%%  
{ab*} {yylval =1; return(AB);}  
{a+ b*} {yylval =2; return(A);}  
{a*b+ } {yylval =3; return (B);}  
%%
```
- Give the implementation of Lexical analyzer using DFA.
- c) Construct SLR parsing table for the following grammar:- [10]
- ```
A->(A) | a  
Parse the string (a)$
```

**PART-B**

Answer any two questions from the following:

- Q4 a) What is an intermediate code? Write the benefits of intermediate code in the design of the compiler? [4]
- b) Explain with the help of an example the most closely nested rule for accessing non local names. [4]
- c) Translate the following code statements into: [6]
- i) Quadruples
  - ii) Triples
  - iii) Indirect Triple.
- (a-b)\*(c-d)-(a+b)
- d) Explain the Peephole optimization. [6]
- Q5 a) Explain the rules used for the construction of the basic blocks. [4]
- b) Explain the significance of the construction of the DAG w.r.t the following example. [6]
- (a+b)\*(a+b+c)

- c) Consider the following statements given below:
- $x = a - b$   
 $y = a - d$   
 $z = x * y$
- i) Write the assembly code for the above statement. [3]
- ii) Write the contents of address and register descriptor for the above statement. [3]
- iii) Calculate the total cost of executing the above statement. [2]
- d) Explain the loop unrolling technique with an example. [2]
- Q6 a) Explain the different data structures that can be used to create symbol table. [8]
- b) Write the translation scheme for flow of control statements. [8]
- c) What do you mean by Backpatching and how it is been carried out? [4]

**PART – C**

**Answer any one questions from the following:**

- Q7 a) What is a symbol table? Explain the contents of symbol table and data structures used to create symbol table. [10]
- b) Explain with the help of a diagram the structure of activation record. [5]
- c) Define the input buffering scheme. Explain with the help of pseudopod the use of the sentinel character in the input buffering [5]
- Q8 a) Give the following grammar
- $S \rightarrow P$   
 $P \rightarrow *R|R$   
 $R \rightarrow (S)|id$
- Obtain collection of set of LR(O) items [3]
- Draw goto graph [3]

- b) Explain the following terms with examples: [6]
- i. Lexemes
  - ii. Patterns
  - iii. Tokens
- c) Explain the phases of Compiler. [8]

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T.E - (IT) (Sem-VI)(Revised Course 2019-2020)

EXAMINATION JULY 2023

Electronic Commerce

[Time: 3:00 Hours]

[Max. Marks:100]

- Instructions:** i) Answer any two questions from Part – A.  
ii) Answer any two questions from Part – B.  
iii) Answer any one question from Part – C.

**PART - A**

- Q1 a) Explain different forces fueling E-commerce. 8  
b) Explain the lifecycle approach in launching an online business. 6  
c) Explain One to One Enterprise. 6
- Q2 a) Explain SET in detail. 8  
b) Explain the process of payment gateway. 6  
c) Explain pricing issues in online banking. 6
- Q3 a) Differentiate between traditional commerce and E-commerce. 8  
b) Explain Consumer, Legal and Business issues. 6  
c) Explain Information Superhighway. 6

**PART - B**

- Q4 a) With the help of neat diagram explain mercantile model from consumer's perspective. 8  
b) Explain pull versus push supply chain models. 6  
c) Explain elements of supply chain management. 6
- Q5 a) Explain the role of technology in customer service. 8  
b) Write a note on threats to internet security. 6  
c) Explain Customer asset management. 6
- Q6 a) Explain OMC in detail. 8  
b) Explain the management issues in CAM. 6  
c) Write a note on hunger for customer feedback. 6

**PART - C**

- Q7 a) List and explain different business models. 8  
b) Define E-commerce from various perspectives. 6  
c) Explain EDI. 6

- Q8
- a) List the applications of E-Commerce in retailing. 8
  - b) Explain the management challenges in online retailing. 6
  - c) Write a short note on: 6
    - i) Online sales force automation.
    - ii) Different types of consumers.

Total No. of Printed Pages: 03

**T.E - (IT) (Sem-VI)(Revised Course 2019-2020)**

**EXAMINATION JULY 2023**

**Technical English & Report Writing**

[Time: 03:00 Hours]

[Max. Marks: 100]

- Instructions:** 1) The paper has 3 PART A,B and C.  
2) Attempt any two questions from Part A and Part B each.  
3) Attempt any one questions from PART C.  
4) Figures to the right indicate full mark.

**PART A**

- Q1 a) Elaborate on any six strategies you would employ to be an effective listener. (10)  
b) Imagine you are being interviewed for a job via telephonic communication. List the telephone communication etiquettes you would follow as an interviewee. State the challenges of a telephonic communication. (10)
- Q2 a) Comment on the following aspects of a Group Discussion: (10)  
i) Speaker Attitudes  
ii) Communication skills  
b) "All the great speakers were bad speaker at first". Explain the implicit meaning of Emmerson's statement and identify six tips for effective speaking. (10)
- Q3 a) Write a note on the following aspects of a job interview: (10)  
i) Open-ended Questions  
ii) Pre-interview preparation steps  
b) You are listening to a structured talk. Elaborate on the skills you would need to provide for an oral discourse analysis of the talk. (10)

**PART B**

- Q4 a) There is a delay in the launch of a product in your organization and you are their Product Manager. Draft a memorandum to your employees explaining reasons for the delay. (10)  
b) What are the features of formal writing? State how it is different from informal writing Give example. (10)
- Q5 a) As a student, you have missed classes for a month due to medical reasons. Draft a formal letter to the Principal about your leave of absence. (10)  
b) Define 'Reading'. Elaborate on the following reading skills- Prediction, Scanning, and Vocabulary Skills & Skimming. (10)

Q6 a) Read the following passage and answer the questions given below: (5x2=10)

Passage

Why is strategic management considered so important? It is involved in many of the decisions that managers make. Most of the significant current business events reported in the various business publications involve strategic management. For example, on a recent day the reports of business events such as the proposed merger of Lockheed Corporation and Martin Marietta, the departure of one of Walt Disney Company's key executives, and the announcement of the merger of Babbage's and Software, are examples of managers making strategic decisions. Also, one survey of business owners found that 69 per cent had strategic plans, and among those owners, 89 per cent responded that they had found their plans to be effective. They stated, for example, that strategic planning gave them specific goals and provided their staffs with a unified vision. Other studies of the effectiveness of strategic planning and management have found that, generally speaking, companies with formal strategic management systems had higher financial returns.

Today strategic management has moved beyond the private sector to include government agencies, hospitals, and educational institutions. For example, the skyrocketing costs of college education, cutbacks in federal aid for students and research, and the decline in the absolute number of high school graduates have forced many university administrators to assess their organizations' aspirations and identify a market niche in which they can survive and prosper.

If an organization produced a single product or service, managers could develop a single strategic plan that covered everything it did. But many organizations are in diverse lines of business. For example, General Electric is in a variety of businesses—everything from manufacturing airplane engines and light bulbs to owning the NBC television network. The Gillette Company includes a diverse array of products ranging from blades and razors and toiletry items to writing instruments, stationery products, and small household and personal-care appliances. Each of these different businesses typically demands a separate strategy. Moreover, these multibusiness companies also have diverse functional departments such as finance and marketing that support each of their businesses. As a result, we need to differentiate between corporate-level, business-level, and functional-level strategies.

**Questions**

- a. Why is strategic management considered important?
- b. According to the studies which companies had higher financial returns?
- c. What are the other organizations apart from the private sectors where strategic management has permeated?
- d. Why is it necessary to differentiate among the three levels of strategy?

*ek order*

↓

- b) Give a title to the Passage. (10)
- b) Create your own format and do a note taking of the above passage. (10)

**PART C**

- Q7 a) Briefly discuss the different types of reports. (10)
- b) Draft a Notice and Minutes of the meeting of Jnanvika Higher Secondary School. (10)
- Q8 a) Assume a topic of your interest, Draft a 'title page' and 'table of contents' of a report. (10)
- b) You are a BE MBA applying for the post of a Project Co-ordinator to an institute of Construction Management & Research. Draft a resume assuming suitable data. (10)

Total No. of Printed Pages: 02

**T.E - (IT) (Sem-VI)(Revised Course 2019-2020)**  
**EXAMINATION JULY 2023**  
**OPEN ELECTIVE Computer Forensics & Cyber Security**

[Time: 03:00 Hours]

[Max. Marks: 100]

**Instructions:** 1) Answer five questions. At least two from Part A, two from Part B and one from Part C.

2) Assume suitable data if necessary.

**PART A**

- Q1 a) Discuss the importance of Computer Forensics. 04
- b) What are the benefits of professional forensics methodology? Explain the Phishing attack. 08
- c) Elaborate on CFX-2000 and use of forensics in Human resource/ Employment proceedings. 08
- Q2 a) A cyber-crime has occurred in Kallows Pvt. Ltd. What should be the steps taken by the Computer forensic specialist to identify and retrieve possible evidence that may exist on the Computer system? 06
- b) Compare Real evidence, Testimonial evidence and Hearsay. 06
- c) Why is collecting evidence necessary? Discuss order of volatility in Cyber Forensic investigations. 06
- d) Discuss Freezing the Scene as a method of gathering evidence. 02
- Q3 a) Discuss Data seizure and Data duplication and Preservation as Computer Forensic services. 08
- b) Discuss some widely accepted guidelines for computer forensic analysis 04
- c) Elaborate on the problems with Computer Forensic evidence. 03
- d) Why is maintaining Chain of Custody important? 05

**PART B**

- Q4 a) Compare Ethical hackers and crackers. Elaborate on the Commandments of an ethical hacker. 08
- b) Elaborate on High tech methods for Cracking Passwords. 06
- c) Discuss the characteristics desired in the tools you select for Ethical hacking. 04
- d) Identify any one password-cracking tool. 02

- Q5 a) Explain in detail the 4 basic steps used by hackers to perform Social engineering. 08
- b) Write a short note on Password Vulnerabilities. 04
- c) Elaborate on Network Infrastructure Vulnerabilities. 08
- Q6 a) Elaborate on "Network Analyzers". 08
- b) Discuss the Denial of Service attacks. 06
- c) Outline some wireless network Vulnerabilities. 06

**PART C**

- Q7 Write short notes on the following: 4\*5=20
- a) Scanning, Poking and Prodding
- b) Social Engineering Countermeasures
- c) SNMP Scanning
- d) Categories of Hackers.
- Q8 a) Identify the characteristics you need to keep in mind while selecting a Computer Forensic Specialist? 06
- b) Specify a few obstacles while collecting computer evidence. Also mention the 5 rule of evidence. 08
- c) What is the use of Computer Forensics in Law enforcement? 06

Total No. of Printed Pages: 1

**T.E - (IT) (Sem-VI)(Revised Course 2019-2020)  
EXAMINATION JULY 2023  
OPEN ELECTIVE Electronics Commerce**

**[Time: 3 Hours]**

**[Max. Marks:100]**

- Instructions:** i) Answer any two questions from Part – A.  
ii) Answer any two questions from Part – B.  
iii) Answer any one question from Part – C.

**PART – A**

- Q.1** a) Define E-commerce from various perspectives. 8  
b) Explain E-business. 6  
c) Explain One to One Enterprise. 6
- Q.2** a) Differentiate between traditional and electronic payment system. 8  
b) Explain secure electronic transaction. 6  
c) Explain pricing issues in online banking. 6
- Q.3** a) Differentiate between traditional commerce and E-commerce. 8  
b) Explain EDI. 6  
c) Explain Information Superhighway. 6

**PART – B**

- Q.4** a) Explain OMC in detail. 8  
b) Explain elements of supply chain management. 6  
c) Explain the different supply chain models. 6
- Q.5** a) Explain Customer asset management in detail. 8  
b) Write a note on online sales force automation. 6  
c) Explain security in e-commerce. 6
- Q.6** a) With the help of neat diagram, explain mercantile model from consumer's perspective. 8  
b) Explain the management issues in CAM. 6  
c) Explain different types of buyers. 6

**PART – C**

- Q.7** a) Explain different forces fueling e-commerce. 8  
b) Explain consumer, legal and business issues. 6  
c) Explain the role of technology in customer service. 6
- Q.8** a) List and Explain different factors affecting dynamics of banking industry. 8  
b) Explain economic viability of an online firm. 6  
c) Explain bricks and clicks business model. 6

Total No. of Printed Pages: 02

T.E - (IT) (Sem-VI)(Revised Course 2019-2020)

EXAMINATION JUNE 2023

Distributed System

[Time: 3:00 Hours]

[Max. Marks:100]

- Instructions:**
1. Figures to the right indicate full Marks
  2. Answer **any Five** questions by selecting **Two** questions from **Part A** and **Two** from **Part B** and **One** question from **Part C**.

**PART A**

- Q1 a) Explain Client Server architecture. 4  
b) Explain different forms of Transparency in Distributed Systems. 8  
c) Explain different types of Communication. 8
- Q2 a) Explain the X Window System. 4  
b) Explain Implementation of Threads. 8  
c) Explain general Issues in Server Design. 8
- Q3 a) Explain working of Remote Procedure Calls. 4  
b) Explain Lamport's digital Clocks. 8  
c) Explain Token Ring Algorithm for Mutual exclusion. 8

**PART B**

- Q4 a) Explain Eventual consistency. 4  
b) Explain reasons and disadvantages of Replication. 8  
c) Explain basic concepts of Fault Tolerance. 8
- Q5 a) Explain compile time versus runtime objects. 4  
b) Explain basic NFS architecture for UNIX system. 8  
c) Explain 4 ways of dealing with shared files in distributed system. 8
- Q6 a) Explain Object Adapter 4  
b) Explain Failure Masking by Redundancy. 8  
c) Explain basic Reliable Multicasting scheme. 8

PART C

- |    |   |   |
|----|---|---|
| Q7 | a) Explain the difference between Physical Clock and Logical Clock.                 | 4 |
|    | b) Explain Bully Election Algorithm.  | 8 |
|    | c) Explain Approaches to code Migration.  | 8 |
| Q8 | a) Explain role of Virtualization in distributed system.                            | 4 |
|    | b) Explain any Data Centric Consistency Model.                                      | 8 |
|    | c) Explain reliable client-server communication using Point-to-Point Communication. | 8 |

Total No. of Printed Pages: 03

**T.E - (IT) (Sem-VI)(Revised Course 2019-2020)**  
**EXAMINATION JUNE 2023**  
**Artificial Intelligence and Fuzzy Logic**

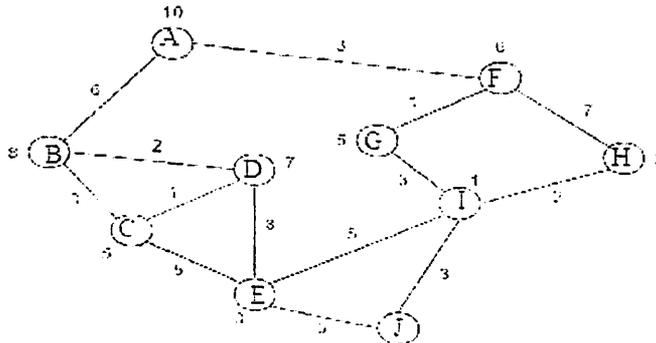
[Time: 3:00 Hours]

[Max. Marks: 100]

- Instructions:**
1. Answer any five questions by selecting 2 Questions from PART A & Part B and one from Part C.
  2. Make necessary assumptions if required.

**PART - A**

- Q1 a) Explain with the help of an example breadth first search and depth limited search technique. 4
- b) Compare the solutions of Best first search and A\* search on the Following graph. 6



- c) Consider the following sentences: 6
- i) Every student scores low marks in analytical subjects
  - ii) Very few can afford to buy expensive gadgets. Translate these sentences into formulas in predicate logic and convert the formulas into set of clauses.
- d) Explain with a PDDL structure how a cargo can be shifted from airport Mopa to airport Bombay. 4
- Q2 a) Explain the difference between forward and backward chaining approach 4
- b) Explain the working of a Hill climbing approach. Suggest two factors which might make it an inappropriate choice. 6

TE1276

- c) Set up the PDDL formulation to solve the following block world problem by specifying the possible actions and action plan Initial state: On(C, D), On (A,B), Ontable(B), Ontable(D), clear(A),Clear(C), Armempty. Goal State: On (C, D), On(B,C), On(A, B), Ontable(D), Clear(A) 8
- d) Explain the basic probability axioms. 2
- Q3 a) Solve the following crypt arithmetic problem using constrain satisfaction problem 6  
 BASE  
 BALL  
 GAMES
- b) Explain the resolution algorithm with an example 6
- c) How does planning for a picnic can be solved by using partial order planning? 4
- d) Write a short note on 4  
 I. Baye's rule  
 II. Independence

**PART – B**

- Q4 a) Explain the different types of learning methods 6  
 b) Explain the steps to construct decision tree 8  
 c) Explain the working of a feed forward approach 6
- Q5 a) Write a short note on 6  
 I. Fuzzy sets and Boolean set  
 II. Fuzzy membership function
- b) Explain the following w.r.t neural network 8  
 I. Hidden layers  
 II. Learning rate  
 III. Error function
- c) Explain the applications of Neural network. 6
- Q6 a) How a linearly separable problem like AND and OR gates can be a solved using perception. 6
- b) Explain with a example a construction of a Fuzzy association matrix. 4

- c) Explain the working of back propagation algorithm in neural network. 6
- d) Explain the applications of Fuzzy system. 4

**PART - C**

- Q7
  - a) Explain the working of an Min max algorithm in game playing problem. 6
  - b) Write a short note on recurrent networks. 4
  - c) Why there is a need to construct multi-layer neural network? 6
  - d) Write a short note on depth limited search 4
- Q8
  - a) Explain the different components used to define a problem 6
  - b) Explain the following with examples: 8
    - i) Learning from observations
    - ii) Rote Learning
    - iii) Learning by examples
    - iv) Learning by advice
  - c) Consider the following statements 6
    - i) Tina likes all kinds of vegetarian food
    - ii) Mango & bread are kind of food
    - iii) Tina eats green leafy vegetables and is healthyRepresent the sentences in First order predicate logic



**PART B**

- Q4 a)** Convert the following code to quadruples and triples: **8**

$$y = a * a + 2 * a * b + b * b$$

- b)** Explain the concept of back patching. **6**
- c)** Describe the structure of an activation record. **6**
- Q5 a)** Write the three-address code for the code snippet given below. Construct the basic blocks and draw the flow graph. Further, optimize the code. **10**

```

j=0;
sum=0;
while(j++<5){
    j=3*j;
    sum=sum+j;
}
    
```

- b)** Explain the DAG representation of basic blocks. Construct a DAG for the following expressions. **10**
- ```

t1=a+b
x=t1
t2=a-b
y=t2
z=x+y
    
```
- Q6 a)** Explain the data structures used in symbol table management. **4**
- b)** What is next-use information? How can it be computed? Write an algorithm to determine next uses. **8**
- c)** Explain peephole optimization. **8**

**PART C**

- Q7 a)** Consider the following C statements with lexical errors. (Both are from different programs) What do you think the programmer intended while writing these lines? According to you, what should be the strategy of error recovery in such situations? **5**
- i)** fi (a == f(x))
- ii)** d = 2r
- b)** Explain bootstrapping and porting **5**
- c)** Explain the issues in the design of a code generator **6**
- d)** Explain the need for left factoring a grammar with the help of an example. **4**

Q8 Write short notes on the following: [5 x 4 mks.]

20

- a) Ambiguity in grammars.
- b) Register and Address descriptors.
- c) Storage allocation strategies.
- d) Interpreters.
- e) Dead code elimination and common sub-expression elimination.



- Q3 a) Consider the following xml:
- i. Define a **DTD** that validates the xml given below 5
  - ii. Define an **XSD** that validates the xml given below 5
- ```
<?xml version="1.0" encoding="UTF-8"?>
<student>
  <firstName>Luca</firstName>
  <lastName>Rossi</lastName>
  <id>281283</id>
  <plan>
    <courses year="3">
      <course>
        <name> Programmazione Orientata agli Oggetti </name>
        <shortName>POO</shortName>
      </course>
      <course>
        <name>Analisi e progettazione del software</name>
        <shortName>APS</shortName>
      </course>
    </courses>
  </plan>
</student>
```
- b) Write a JavaScript code to implement the following with respect to the string 'university'
    - i. to find the character at index 3 of the string 3
    - ii. to convert the string to uppercase 2
    - iii. to search for string 'sity' in 'university' and replace the searched string with the string 'se' 3
  - c) State the difference between a valid and a well-formed xml document 2

### PART – B

- Q4 a) Write a php script that connects to a database, retrieves records from a table and displays them on a web page. Make necessary assumptions and state them 8
- b) Explain the structure of an ASP .Net web application 6
  - c) Explain in brief **any 4** methods of the XMLHttpRequest object 6
- Q5 a) Write php code to find the number of occurrences of a given number in an array of numbers 6
- b) Discuss in brief any one AJAX framework 7

- c) Explain the following ASP.Net Validation controls and their properties:
- i. CompareValidator Control 3
  - ii. CustomValidator Control 4
- Q6 a) Explain the ASP .Net Menu Navigation Control 7
- b) Create an ASP.Net HTTP Handler web application that computes and displays the value of  $x^y$  where x and y are entered in textboxes of a web form 8
- c) Explain with examples the different types of arrays in php 5

**PART - C**

- Q7 a) Write a javascript code to check if a given string is a palindrome. Take the string as input from the user using prompt dialog 6
- b) What are the features and benefits of the .Net framework? 8
- c) What is XSL? Explain its use with the help of an example 6
- Q8 a) What are cookies? With relevant php code show how cookies are created and accessed 7
- b) Describe the following ASP.Net Database Controls
- i. FormView control 8
  - ii. DataList control
- c) What are CSS cascading order rules? List the benefits of using CSS 5

Total No. of Printed Pages:4

**T.E (Information Technology) Semester-VI (Revised Course 2019-20)**  
**EXAMINATION JANUARY 2023**  
**Principles of Compilers**

[Duration : Three Hours]

[Total Marks : 100]

- Instructions:**
- i) Answer any two questions from Part A, any two questions from Part-B and any one question from Part-C.
  - ii) Assume suitable data, if necessary.
  - iii) Figures to right indicate full marks.

**PART A**

- Q.1
- a) Explain the process of Bootstrapping and Porting with the help of T-diagrams. [8]
  - b) Consider the grammar [6]  
 $S \rightarrow AS|b$   
 $A \rightarrow SA|a$   
Compute closure and goto
  - c) What is ambiguous grammar? How will you check if the given grammar is ambiguous or not [6]
- Q.2
- a) Compile the following set of C statements by showing the input and output of each phase of compilation. [6]  

```
int m, x=0;
while(x<5)
{ m=x ;
  x++;
}
```
  - b) Differentiate between [6]
    - i) Analysis phases and Synthesis phase of compiler
    - ii) Front end and back end phases of compiler
    - iii) Linkers and Loaders
  - c) Show that the following grammar is LR(1) [8]  
 $S \rightarrow Aa | bAC | Bc | bBa$   
 $A \rightarrow d$   
 $B \rightarrow d$
- Q.3
- a) Find First and Follow in the following grammar. [4]
    - i)  $S \rightarrow aABb$
    - $A \rightarrow c | \epsilon$

- ii)  $B \rightarrow d | \epsilon$   
 $S \rightarrow aBDh$   
 $B \rightarrow cC$   
 $C \rightarrow bC | \epsilon$   
 $D \rightarrow EF$   
 $E \rightarrow g | \epsilon$   
 $F \rightarrow f | \epsilon$

- b) List and explain the specialized tools for helping in implementation of various phases of compiler. [4]
- c) Explain the features of recursive descent parser [4]
- d) Consider the following grammar [8]  
 $S \rightarrow a | \wedge | (T)$   
 $T \rightarrow T, S | S$   
 Construct operator precedence parsing table and check if the string ((a,a),  $\wedge$ ,(a)) can be parsed or not

**PART-B**

- Q.4 a) Explain translation scheme for case statements [8]
- b) Consider the following grammar [6]  
`int a [10];  
 sum = 0;  
 for (i = 0; i <= 10; i ++)  
 sum=sum+ a[i];`  
 Construct basic blocks and flow graphs
- c) Describe various storage allocation strategies. [6]
- Q.5 a) Generate three address code for the following [6]  
 i) `switch(ch)`  
`{  
 case 1: c= a+b;  
 break;  
 case 2: c=a-b;  
 break;  
 }`
- ii) `c=0`  
`do {`

```

if (a<b) then
x++;
c++;
) while (c<5)
    
```

- b) Explain peephole optimization techniques [6]  
 c) Write the translation scheme for assignment statement. [8]

Q.6

- a) What is a symbol table? Explain the contents of symbol table and data structures used to create symbol table. [7]  
 b) Convert the following code to Quadruples, Triples and indirect Triples [6]  
 $a * b + d - e * f * g - h/e$   
 c) Explain the syntax directed translation for Booleans [7]

**PART C**

Q.7

- a) Identify lexemes, token and pattern in the following [4]  

```

Void MUL(int m,int n)
{
int x;
x=m * n ;
}
    
```

 b) Write short note on next use information. [4]  
 c) Explain backpatching using an example. [6]  
 d) Consider the following grammar [6]

```

S → TL;
T → int | float
L → L, id | id
    
```

Parse the input string int id, id using shift reduce parser.

Q.8

- a) Construct DAG for the following [4]  
 $t1 = u + v$   
 $x = t1$   
 $t2 = u - v$

y = t2  
z = x+y

b) Consider the following lex program

[6

```
%{ X, Y %}  
%%  
{xy*} {yylval=1;return(X);}  
{x+y*} {yylval=2;return(Y);}  
{x*y+} {yylval=3;return(Y);}  
%%
```

Give the DFA implementation of the lexical analyser.

c) What do you understand by activation tree and activation record? Give example

[5

d) What are the conflicts that occur during shift reduce parsing. Explain giving examples.

[5

Total No. of Printed Pages: 2

**T.E. (Information Technology) Semester-VI (Revised Course 2019-20)**  
**EXAMINATION JANUARY 2023**  
**Artificial Intelligence and Fuzzy Logic**

[Time: Three Hours]

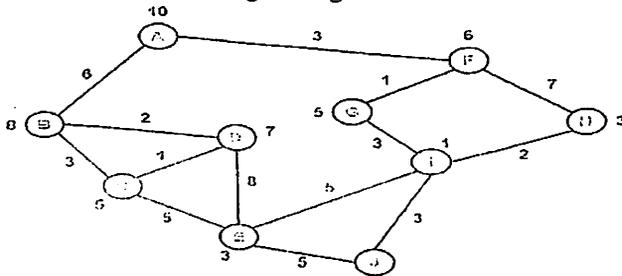
[Max. Marks:100]

- Instructions:**
- 1) Attempt two questions from Part-A, two questions from Part-B and one from Part-C.
  - 2) Figures to the right indicate marks.
  - 3) Make suitable assumptions wherever necessary.

**PART A**

- Q1
- a. What are the components that are needed for solving problem based on searching? 7
  - b. What is the difference between informed and uninformed search strategies? Explain any one uninformed search strategy with example. 7
  - c. Define Constraint Satisfaction Problem. Solve the following cryptarithmic puzzle. 6
- RON  
 + WON  
 -----  
 GOAT

- Q2
- a. Find the solution using A\* algorithm. Where B: Start Node and J: Goal State. 7



- b. Discuss alpha beta pruning with suitable examples. 7
- c. Consider the Air cargo Transpotation Problem. Give the STRIPS representation for the problem. 7  
 The problem can be defined with three action load, unload and fly 6

- Q3
- a. State Bayes's rule. 8  
 Dr, Foster remembers to take his umbrella with him 80% of the days. It rains on 30% of the days when he remember to take his umbrella and it rains on 60% of the days when he forgets to take his umbrella. What is the probability that he remembers to take his umbrella when it rains. 8
  - b. Explain the following 6
    - a. Uncertainty
    - b. Joint Probability
    - c. Conditional Probability
  - c. Explain Bayesian Belief Network with example. 6

**PART B**

- Q4 a. Explain supervised learning methods. Give example for each. 5  
 b. Explain the following terms 3  
 a. Information Gain  
 b. Entrophy  
 c. Decision Tree  
 c. Use entropy and information gain to find the root attribute for a decision Tree to predict “Risk” 12  
 given the following training set examples.

Eg.	Car Type	Car_Age (in yrs)	Risk
1	light	0<age<5	low
2	medium	5<age<8	moderate
3	Light	5<age<8	low
4	medium	0<age<5	moderate
5	heavy	8<age	high
6	heavy	0<age<5	moderate
7	light	8<age	moderate
8	medium	5<age<8	high

- Q5 a. Discuss the working of perceptron. Explain any two activation function that can be used. 6  
 b. Solve for AND logic using single layer perceptron. Assume  $w_1=1, w_2=1,$  7  
 $h=-1, \text{ learning rate}=1, F(y) = \begin{cases} 1 & Y_{in} > 0 \\ 0 & Y_{in} \leq 0 \end{cases}$   
 c. Write a note on Convolutional Neural Network. 7  
 Q6 a. What is fuzzification? Explain any two methods for fuzzification. 7  
 b. Explain the following terms 7  
 • Fuzzy sets  
 • Fuzzy membership  
 c. Explain the membership functions used in fuzzy logic. 6

**PART C**

- Q7 a. Explain the terms plateaus, ridges and local maxima w.r.t hill climbing algorithms. illustrate with a 6  
 state space.  
 b. Why is Min-Max algorithm used? What is its limitation. Explain the method by which this 7  
 limitation can be handled.  
 c. Discuss the forward space search and backward state space search with an example.  
 Q8 a. What are recurrent neural network. Explain with examples. 7  
 b. Explain any one methods of Defuzzification 7  
 c. Compare fuzzy and crisp system. 7  
 6

**T.E. (Information Technology) (Semester-VI) (RC 2019-20)**  
**EXAMINATION JANUARY 2023**  
**Web Technology**

[Duration : 3:00 Hours]

[Total Marks :100]

**Instructions:** Answer **any five** questions by selecting **two** questions from part **A**, **two** questions from part **B** and **one** question from Part **C**.

**PART A**

- Q.1 a) Design a form using HTML with 1 Textbox for Department name, 2 radio buttons for yes or no, 3 check boxes of any 3 subject names, 1 Text Area Box and 1 submit button. (6)
- b) Write a suitable HTML code to display your name by aligning it in left, center and right position by using a CSS Property. Illustrate the output. (6)
- c) Create an XML file that contains information regarding any four outdoor games you play and show the output. (8)
- Q.2 a) Write a JavaScript code to perform any four arithmetic operations on any two integer values and display the output (6)
- b) Explain jQuery #id selector . Write a suitable program to implement jQuery #id selector and show the output. (6)
- c) Explain jQuery Hide() and show() Write a suitable program to show jQuery Hide() and show() and draw the output (8)
- Q.3 a) Write a suitable HTML code to display the background color upto the content by using the CSS Background-clip content-box Property. Illustrate the output. (6)
- b) Illustrate transforming XML using XSL and display the output for TE IT subject code, subject names and maximum marks that you have opted for. (6)
- c) Explain the jQuery animate(). Write a suitable program to implement the jQuery animate () Method to animate width. Illustrate the output. (8)

**PART B**

- Q.4 a) Demonstrate how to reverse an array in JavaScript with a suitable program. Show the output (8)
- b) What is type casting in PHP? Write a suitable program to implement type casting in PHP. Display the output. (6)

- c) What is a Conditional Statement in PHP? Combining Conditional Statements write a PHP program to find if 2022 is a leap year. (6)
- Q.5 a) Explain and demonstrate the Placeholder Control. Write a dot net code to display a message in a textbox, onclick of a button (6)
- b) Describe TreeView Control, its properties and ways to add its contents (8)
- c) Explain the Menu Control (6)
- Q.6 a) Elaborate on the GridView Control with the help of a suitable example (5)
- b) Discuss any five Validation Controls (10)
- c) Write the code snippet of the Default.aspx file to design the following (5)

Select Title  Enter Name

**PART C**

- Q.7 a) Create an XML file and an external DTD file to display information regarding any four Bollywood Movies and represent how it will appear in the browser. (6)
- b) Explain the jQuery click(). Write a suitable program to implement jQuery click() and show the output. (8)
- c) Explain jQuery text () Method .Write a suitable program to demonstrate get content by jQuery text () Method for DOM manipulation. Display the output. (6)
- Q.8 a) Describe the SiteMapPath Control. (8)
- b) Describe the SqlDataSource Control with a suitable example (6)

c) Write the code snippet of the Default.aspx file to design the following

(6)

Enter Your Name: \_\_\_\_\_

June 2022						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
28	29	30	1	2	3	4
5	6	7	8	9	10	11
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26	27	28	29	30	1	2
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**T.E. (Information Technology ) (Sem VI) (Revised Course 2019-20)**  
**EXAMINATION JANUARY 2023**  
**Distributed Systems**

Duration : 3:00 Hours]

[Total Marks : 100]

Instructions:

- 1) Answer two questions from Part A, two questions from Part B & one question from Part C
- 2) Make suitable assumptions if required.

**PART – A**

- 1.1 a) Describe the different types of problems for scalability in distributed systems with possible solutions. 7
- 1.1 b) With the help of an example explain bully algorithm for electing the coordinator process. 7
- 1.1 c) Explain two tiered and three tiered client server architectures. 6
- 1.2 a) What do you understand by 'transparent' distributed system? Briefly explain different forms of transparencies in this system. 8
- 1.2 b) List and explain general design issues in servers. 6
- 1.2 c) Write a note on code migration and its models. 6
- 1.3 a) With the help of a neat diagram, explain the RPC operation for performing remote computation. 6
- 1.3 b) Describe Berkeley algorithm for clock synchronization. 7
- 1.3 c) Explain the distributed algorithm for mutual exclusion. What are the advantages of this algorithm over the centralized algorithm? 7

**PART – B**

- 1.4 a) Explain the concept of Eventual consistency with an example. 6
- 1.4 b) What do you understand by fault tolerant system? Describe the different types of failures. 6
- 1.4 c) List and explain the various CORBA services. 8
- 1.5 a) With the help of a neat diagram explain read your writes consistency model. 6
- 1.5 b) Explain the triple modular redundancy model for failure masking. 7
- 1.5 c) Explain the overall architecture of CORBA 7
- 1.6 a) Explain the concept of continuous consistency with an example. 6
- 1.6 b) What are the different categories of failures that occur in RPC systems? Explain. 8
- 1.6 c) Write a short note on NFS file systems. 6

**PART – C**

- |     |  |   |
|-----|--|---|
| Q.7 | a) With the help of a neat diagram, explain write follow reads consistency model.                | 6 |
|     | b) Describe in detail decentralized architecture.  | 7 |
|     | c) Describe the overall architecture of DCOM.  | 7 |
| Q.8 | a) What is an open distributed system? What benefits does openness provide?                      | 6 |
|     | b) With the help of a neat diagram, explain Asynchronous RPC operation.                          | 6 |
|     | c) Explain how reliable group communication is achieved through reliable-multicasting technique. | 8 |

**PART – C**

- |     |  |   |
|-----|--|---|
| Q.7 | a) With the help of a neat diagram, explain write follow reads consistency model.                | 6 |
|     | b) Describe in detail decentralized architecture.  | 7 |
|     | c) Describe the overall architecture of DCOM.  | 7 |
| Q.8 | a) What is an open distributed system? What benefits does openness provide?                      | 6 |
|     | b) With the help of a neat diagram, explain Asynchronous RPC operation.                          | 6 |
|     | c) Explain how reliable group communication is achieved through reliable-multicasting technique. | 8 |

Total No. of Printed Pages: 2

**B.E. (Information Technology) (Semester- VIII) (RC 2016-17)**  
**EXAMINATION JANUARY 2023**  
**Distributed System**

[Time: 3:00 Hours]

[Max. Marks:100]

- Instructions:**
1. Figures to the right indicate full Marks
  2. Answer **any Five** questions by selecting **Two** questions from **Part A** and **Two** from **Part B** and **One** question from **Part C**

**Part –A**

Answer any Two questions from the following:

- Q1
- a) Define a Distributed System. 04
  - b) List and Explain different aspects of Transparency from the perspective of Distributed System 08
  - c) With a diagram explain the steps involved in Remote Procedure Calling (RPC). 08
- Q2
- a) Explain Advantages and Disadvantages of Light Weight Processes for threads' implementation. 04
  - b) List and Explain Different Approaches to Code Migration. 08
  - c) With diagrams explain any 4 forms of communication. 08
- Q3
- a) Explain Lamport's algorithm for global time? 04
  - b) Explain the Bully Election Algorithm. 08
  - c) Explain Token Ring Algorithm for Mutual Exclusion. 08

**Part –B**

Answer any Two questions from the following:

- Q4
- a) With a diagram explain Eventual Consistency Model. 04
  - b) With a diagram explain strict Consistency, Linearizability and Sequential consistency Models. 08
  - c) Explain pros-cons of Replication. 08

- Q5 a) Briefly explain epidemic protocols. 04  
b) Explain Three Phase Commit Protocol. 08  
c) Explain Backward Recovery and Forward Recovery 08

- Q6 a) Explain Basic NFS architecture for UNIX systems. 04  
b) Explain the General organization of a CORBA system 08  
c) Provide an overview of DCOM 08

**Part –C**

Answer any One question from the following:

- Q7 a) Explain difference between Nested Transactions and Distributed Transactions. 04  
b) Explain the two Phase LOCKING and Strict two phase LOCKING Algorithms 08  
c) Explain General Design issues involved while designing a server. 08
- Q8 a) Explain key challenges faced while designing a Distributed System. 08  
b) List and briefly explain some modern day distributed system technologies. 08  
c) Explain working of WWW Document Module 04

Total No. of Printed Pages:2

**T.E - (Computer) (Sem-VI)(Revised Course 2019-2020)**  
**EXAMINATION JANUARY 2023**  
**Cloud Computing & Application**

[Time:3 Hours]

[Max. Marks:100]

- Instructions:** 1) Answer any five full questions selecting any two from PART- A and PART-B and one from PART-C  
2) Figures to the right indicate full marks.  
3) Draw a neat diagram wherever necessary  
4) Make suitable assumptions and state those assumptions, if any

**PART A**

- Q1 a) Define Cloud computing with respect to NIST. Enlist and explain deployment models of cloud computing. 6  
b) What are the benefits and challenges of cloud computing? 4  
c) What is virtualization? List its benefits and drawbacks. 6  
d) Write a short note on IaaS. 4
- Q2 a) What do you mean by Cloud Anatomy? Explain with the help of a diagram. 6  
b) Write advantages and disadvantages of PaaS. 6  
c) Explain the different attacks targeted on hypervisors with a neat diagram. 8
- Q3 a) With the help of a diagram explain in detail essential characteristics of cloud computing. 6  
b) Compare and contrast public and private clouds 6  
c) Enlist and explain the requirements that need to be considered for cloud services 8

**Part B**

- Q4 a) Write a short note on Reliability, Availability and security of services deployed from the cloud. 6  
b) Explain any one tool used to manage cloud computing services. 8  
c) Give all steps that are used to decide whether cloud is right for your requirements. 6
- Q5 a) Write a short note on SOA. 6  
b) Write short notes on the following: 8  
1. Salesforce.com  
2. Ubuntu and Redhat  
c) Explain development environment for service development. 6

- Q6 a) Explain in terms of service development 8  
1. Amazon  
2. Microsoft Azure
- b) What is Total Cost of Ownership? What are the guidelines to improve the total cost of ownership of your app. 6
- c) Write a short note on economic constraints and business needs. 6

**Part C**

- Q7 a) Enlist and explain Phases of Cloud Migration. 6  
b) Describe types of virtualization with the help of a diagram. 8  
c) With a neat diagram explain Service architectural model of SOA. 6
- Q8 a) In the 5-4-3 principle of cloud computing, what does 3 represent? Explain in detail. 6  
b) Write a short note on characteristics of IaaS, PaaS and SaaS. 6  
c) Draw and explain the Google App Engine (GAE) infrastructure. 8

Total No. of Printed Pages: 1

TE1282

**T.E. (Information Technology) Semester-VI (Revised Course 2019-20)**

**EXAMINATION JANUARY 2023**

**E-Commerce**

**[Time: Three Hours]**

**[Max. Marks:100]**

**Instructions:** Answer any five questions by selecting two questions from Part A, two questions from Part B and one question from Part C.

**PART A**

- Q1 A) List and explain various categories of Ecommerce. 10  
 B) Define Ecommerce from various perspectives with suitable examples. 8  
 C) Explain One to One Enterprise. 2
- Q2 A) Explain key consumer, legal and business issues associated with payment systems. 6  
 B) List and Explain limitations of Ecommerce. 10  
 C) Differentiate between E-Business and Ecommerce. 4
- Q3 A) Explain following issues in online banking: 10  
 a. Differentiating products and services  
 b. Marketing issues-attracting customers.  
 c. Pricing issues  
 d. Managing financial supply chains.  
 B) What are smart cards? Explain benefits of smart cards. Give applications of smart cards. 10

**PART B**

- Q4 A) Explain in detail mercantile model in consumer perspective. 10  
 B) Write note on 6  
 a) Digital Signature  
 b) Cryptography  
 C) Explain what the terms supply chain and supply chain management mean? 4
- Q5 A) Explain online sales force automation and its various elements. 8  
 B) Explain various security protocols. 6  
 C) Compare Push and Pull model of supply chain management. 6
- Q6 A) What are the different types of threats to internet security? 6  
 B) Write a note on economic viability of an online firm. 8  
 C) List and Explain types of retailing business models and challenges faced by them. 6

**PART C**

- Q7 A) Identify and Explain different forces fueling Electronic Commerce. 8  
 B) State the difference between Brick and Mortar and pure online business model. 8  
 C) Explain Digital Cash and its working. 4
- Q8 A) What are the various benefits of intranets and sales automations? 8  
 B) Explain order management cycle. 8  
 C) Write note on financial analysis involved in assessing economic viability of online firm. 4

Total No. of Printed Pages: 1

TE1283\_2

**T.E. (Information Technology) Semester-VI (Revised Course 2019-20)  
EXAMINATION JANUARY 2023**

**Open Elective - Computer Forensics & Cyber Security**

[Time: Three Hours]

[Max. Marks:100]

**Instructions:**

1. Answer any two questions from Part – A
2. Answer any two questions from Part – B
3. Answer any one question from Part - C

**PART A**

- Q1 a) Discuss the data recovery solution by BMC software 8  
b) Explain the various obstacles to backing-up applications. 6  
c) Explain the various computer forensics services. 6
- Q2 a) Explain chain of custody. 8  
b) What are the different obstacles for collecting evidence? 6  
c) Write a note on freezing & honey-potting. 6
- Q3 a) Explain CFX-2000 in detail. 8  
b) What are the benefits of Professional forensics methodology? 6  
c) Explain computer forensics assistance to Human. Resources/Employment Proceedings. 6

**PART B**

- Q4 a) Explain different ways of password cracking and their countermeasures. 8  
b) Explain the steps in planning and performing attacks 6  
c) Explain the different ethical hacking commandments 6
- Q5 a) Explain the steps for developing the ethical hacking plan 8  
b) Write a note on MAC daddy attack. 6  
c) Write a note on wireless LAN discovery. 6
- Q6 a) Explain social engineering in detail. 8  
b) Explain the different security countermeasures for WLANS 6  
c) Write a note on vulnerable wireless workstations. 6

**PART C**

- Q7 a) Define password vulnerabilities. List and explain different types of password vulnerabilities. 8  
b) Explain hi-tech password cracking. 6  
c) Explain how MAC spoofing can be carried out in UNIX and Windows based systems. 6
- Q8 a) Explain the following: 8  
i) Script kiddies  
iii) Cyberterrorists  
ii) Intermediate hackers  
iv) Elite Hackers  
b) Write a note on maintaining anonymity. 6  
c) Write a note on Netstumbler. 6

Total No. of Printed Pages: 2

**T.E - (IT) (Sem-VI)(Revised Course 2019-2020)**  
**EXAMINATION JANUARY 2023**  
**OPEN ELECTIVE Electronics Commerce**

[Time: 3 Hours]

[Max. Marks:100]

- Instructions:** 1) Answer any two questions from Part - A  
2) Answer any two questions from Part - B  
3) Answer any one question from Part – C

**PART A**

- Q1 a) Discuss the Generic framework for E-Commerce with its two supporting pillars in details also draw a neat sketch of the framework. 8
- b) Specify advantages and limitation of E-Commerce to Organizations and Society at large. 6
- c) What do you understand by One to One Enterprise? Explain giving examples. 6
- Q2 a) Why E-Business is considered as superset of E-Commerce? State advantages of E-Business over E-Commerce. 7
- b) State and explain the 7 Components of a successful E-Commerce business strategy. 7
- c) Differentiate between brick and mortar and pure online business model. 6
- Q3 a) What are the most essential requirements for any E-Payment Systems? 6
- b) What are three broad categories EFT can be segmented into? Explain each category in details. 6
- c) Discuss various benefits of payment gateways, also state its two disadvantages. 8

**PART B**

- Q4 a) Classify E-commerce applications into three distinct classes giving examples. 9
- b) Write a brief report on "Economic viability of an Online Firms today". 5
- c) Specify the important factors affecting the Retailing Industry dynamics due to e-commerce. 6

- Q5 a) Discuss the types of Consumers and types of purchasing behaviour the marketing researchers have categorized. 6
- b) "Online technology must complement management and operational strategy." Justify this Statement giving valid reasons. 8
- c) Explain with a neat diagram all the different functions that are required to be integrated in a Supply Chain through Intranet. 6
- Q6 a) Explain in brief the four major components of Customer Asset Management. 8
- b) Draw Intranet Architecture for Marketing Decision Support. 6
- c) Write a note on role of technology in customer service. 6

**PART C**

- Q7 a) Show stepwise Working of the Secure Transaction Protocol (SET). 8
- b) Argue with proper justifications that "**Banks are wary of letting another parties or the Intermediaries control the software interface for its customers**". 6
- c) Discuss the Role of Web on "**Online Customer Service and Support system**" resulting in a more efficient way to deal with the satisfied customer output. 6
- Q8 a) Explain the basic E-Security needs. 5
- b) Which are the various threats or crimes on the web that merchants must understand. 8
- c) Define the basic goals of SET transaction. 7

Total No. of Printed Pages: 1

T.E. (Information Technology) Semester-VI (Revised Course 2019-20)  
EXAMINATION JANUARY 2023

Open Elective - Computer Forensics & Cyber Security

[Time: Three Hours]

[Max. Marks:100]

- Instructions:**
1. Answer any two questions from Part – A
  2. Answer any two questions from Part – B
  3. Answer any one question from Part - C

**PART A**

- Q1 a) Discuss the data recovery solution by BMC software 8  
b) Explain the various obstacles to backing-up applications. 6  
c) Explain the various computer forensics services. 6
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b) What are the different obstacles for collecting evidence? 6  
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- Q3 a) Explain CFX-2000 in detail. 8  
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c) Explain computer forensics assistance to Human. Resources/Employment Proceedings. 6

**PART B**

- Q4 a) Explain different ways of password cracking and their countermeasures. 8  
b) Explain the steps in planning and performing attacks 6  
c) Explain the different ethical hacking commandments 6
- Q5 a) Explain the steps for developing the ethical hacking plan 8  
b) Write a note on MAC daddy attack. 6  
c) Write a note on wireless LAN discovery. 6
- Q6 a) Explain social engineering in detail. 8  
b) Explain the different security countermeasures for WLANS 6  
c) Write a note on vulnerable wireless workstations. 6

**PART C**

- Q7 a) Define password vulnerabilities. List and explain different types of password vulnerabilities. 8  
b) Explain hi-tech password cracking. 6  
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b) Write a note on maintaining anonymity. 6  
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Total No. of Printed Pages: 1

**T.E. (Information Technology) Semester-VI (Revised Course 2019-20)**

**EXAMINATION JANUARY 2023**

**Open Elective - Computer Forensics & Cyber Security**

**[Time: Three Hours]**

**[Max. Marks:100]**

- Instructions:**
1. Answer any two questions from Part – A
  2. Answer any two questions from Part – B
  3. Answer any one question from Part - C

**PART A**

- Q1 a) Discuss the data recovery solution by BMC software 8  
b) Explain the various obstacles to backing-up applications. 6  
c) Explain the various computer forensics services. 6
- Q2 a) Explain chain of custody. 8  
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- Q3 a) Explain CFX-2000 in detail. 8  
b) What are the benefits of Professional forensics methodology? 6  
c) Explain computer forensics assistance to Human. Resources/Employment Proceedings. 6

**PART B**

- Q4 a) Explain different ways of password cracking and their countermeasures. 8  
b) Explain the steps in planning and performing attacks 6  
c) Explain the different ethical hacking commandments 6
- Q5 a) Explain the steps for developing the ethical hacking plan 8  
b) Write a note on MAC daddy attack. 6  
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- Q6 a) Explain social engineering in detail. 8  
b) Explain the different security countermeasures for WLANS 6  
c) Write a note on vulnerable wireless workstations. 6

**PART C**

- Q7 a) Define password vulnerabilities. List and explain different types of password vulnerabilities. 8  
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iii) Intermediate hackers  
iv) Elite Hackers  
b) Write a note on maintaining anonymity. 6  
c) Write a note on Netstumbler. 6

Total No. of Printed Pages: 2

**T.E (Information Technology) (Sem-VI) (Revised Course 2016-2017)**

**EXAMINATION JANUARY 2023**

**Web Technology**

**[Time: 3 Hours]**

**[Max. Marks:60]**

**Instructions:** Answer any two questions each from Part A, Part-B and any one question from Part-C.

**PART-A**

- |    |    |  |   |
|----|----|--|---|
| Q1 | a. | What are the elements of Web page? With neat diagram explain the web architecture.                 | 8 |
|    | b. | Explain the following attributes with suitable example.<br>i. href ii. src iii. alt iv. Style      | 8 |
|    | c. | Explain the methods for adding CSS to HTML document.   | 4 |
| Q2 | a. | Explain various attributes of Radio Buttons and write HTML code for a form with two radio buttons. | 8 |
|    | b. | List and explain the key components of XML.  | 8 |
|    | c. | Explain any four jQuery effect methods.  | 4 |
| Q3 | a. | What is JavaScript? Write a code for onmouseout event.   | 6 |
|    | b. | Explain briefly XMLHttpRequest Object Properties.  | 6 |
|    | c. | What is jQuery Selector? Explain briefly three types of selectors with example.                    | 8 |

**PART-B**

- |    |    |   |   |
|----|----|---|---|
| Q4 | a. | Write a PHP function that demonstrates passing two arguments fname and year.  | 5 |
|    | b. | What is PHP Cookie? Give the syntax for the following functions.<br>i. setcookie() ii. session_start() iii. session_destroy() | 9 |
|    | c. | Write a short note on cross platform web application development  | 6 |
| Q5 | a. | Design ASP.Net web page to simulate calculator to perform four basic arithmetic operations                                    | 6 |
|    | b. | Explain the life cycle of JSP.  | 6 |
|    | c. | List and Explain different types of JDBC drivers.   | 8 |

- Q6 a. With suitable example explain three types of variable scopes in PHP. 8  
b. Write servlet program to find the square of a given number. 4  
c. Explain the steps involved in creating and deploying an ASP.NET application. 8

**PART-C**

- Q7 a. What is web server? Explain different types of web servers. 6  
b. What is an HTML form? Explain its syntax with example. 8  
c. Write a JQuery code to demonstrate the `dblclick()` event method. 6
- Q8 a. Write a code to transform `xml` document into `HTML` document and output the result. 6  
b. Give the differences between `echo` and `print` statements. Write example code for each. 4  
c. Write short note on:  
i. Standard Controls ii. Navigation Controls 10