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Roll No. :

300812(33)

B. E. (Eight Semester) Examination, April-May 2021

(New Scheme)

(CSE Branch)

BIOMETRICS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) is compulsory from each questions. Attempt any two parts from (b), (c) and (d).

Unit-I

1. (a) Name the performance metrics of biometrics system. 2

[2]

- (b) Explain the basic working architecture of biometrics system. 7
- (c) What are the applications and benefits of biometrics system? 7
- (d) Give the important role of biometric identification and verification. Explain in details. 7

Unit-II

- 2. (a) Where is contractive transformation method is used? 2
- (b) Explain the reasons for selecting the eigenfaces method for face recognition and also explain this method. 7
- (c) What is the most suitable algorithm used in the human Iris recognition? 7
- (d) Explain, advantages and disadvantages of face and iris biometrics. 7

Unit-III

- 3. (a) What is Thinning? 2

[3]

- (b) Explain conceptual diagram for the finger print recognition system. 7
- (c) How the Fingerprint Minutiae Features are Extracted? Explain in details. 7
- (d) Explain the advantages and disadvantages of ISL and fingerprint biometrics. 7

Unit-IV

- 4. (a) What is Cryptography? 2
- (b) Explain the RSA algorithm. 7
- (c) What are the Privacy concerns and issues come with biometrics system? 7
- (d) Explain physical, behavioural and classifiable of soft biometrics. 7

Unit-V

- 5. (a) What is AADHAR? 2
- (b) Explain and role of multimodal biometrics. 7
- (c) Explain role of biometrics in enterprise and border security. 7

(d) What are DNA biometrics? Explain with their application.

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B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

**(AEI, Bio Tech, Chem., Civil, CSE, Elect., EEE, EI,
ET & T, IT, Mech., Mining, Metallurgy,
Mechatronics, Prod., Automobile Engg. Branch)**

INFORMATION THEORY and CODING

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : All questions are compulsory and carry equal marks. Part (a) is compulsory in each question and solve any two parts from (b), (c) and (d) of each question. Draw diagram wherever necessary.

Unit-I

1. (a) What is Bandwidth? 2
- (b) Explain information measures with an example. 7

[2]

- (c) Discuss the source coding theorem model. 7
- (d) What is communication system? Explain channel coding its detail. 7

Unit-II

2. (a) Define parity check codes. 2
- (b) Explain error detection and error correction with an example. 7
- (c) Discuss the linear block code by matrices in detail. 7
- (d) Write short notes on : 7
- (i) Block codes
 - (ii) Hamming codes

Unit-III

3. (a) What is CCITT? 2
- (b) Explain binary image compression schemes in detail. 7
- (c) Explain Huffman codes with an example. 7
- (d) Compare between lossless and lossy compression. 7

Unit-IV

4. (a) What is image compression? 2

[3]

- (b) Explain CCITT H 261 video coding algorithm. 7
- (c) Discuss MPEG-2 compression in detail. 7
- (d) Write short notes on : 7
- (i) Speech compression
 - (ii) MPEG compression

Unit-V

5. (a) What is Cryptography? 2
- (b) Explain R-S-A. Algorithm with an example. 7
- (c) Describe the DES and explain in detail. 7
- (d) Write short notes on : 7
- (i) Block cipher code 4
 - (ii) Digital signature 3

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Roll No. :

300815(22)

B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(Civil, CSE, EEE, ET&T Engg. Branch)

INTERNET & WEB TECHNOLOGY

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

***Note : Part (a) is compulsory. Attempt any two from
(b), (c) and (d).***

Unit-I

1. (a) What is internet protocol? 2
- (b) Explain in details Internet Service Providers. 7

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[2]

- (c) Explain three tier architecture of the web application development with proper diagram. 7
- (d) Explain different types of Connectivity. 7

Unit-II

- 2. (a) Write basic elements of HTML. 2
- (b) Explain various formatting tags of HTML. 7
- (c) How to create dynamic web page and also write a code for dynamic web page. 7
- (d) Explain Cascaded style sheet with proper example. 7

Unit-III

- 3. (a) Write uses of Web Browser. 2
- (b) Write the designing steps of XML data structure. Explain it with example. 7
- (c) How to avoid Naming Conflicts in XML? Write one example to handle this problem. 7
- (d) Explain why we used DTD. 7

[3]

Unit-IV

- 4. (a) What is Virus? 2
- (b) Explain the Firewall and its host. 7
- (c) Explain the importance and Implementation of authentication, authorization, and accounting in internet security. 7
- (d) What is Electronic Data Interchange? Explain various Electronic payment system. 7

Unit-V

- 5. (a) Explain the term website. 2
- (b) Explain Telnet in details. 7
- (c) What is FTP? Explain the types of FTP server. 7
- (d) What are the various steps involved in hosting website. 7

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B. E. (Eighth Semester) Examination,

April-May 2021

(New Scheme)

**(AEI, Bio Tech., Chem., Civil, CSE, Elect., EEE, EI,
ET&T, IT, Mech., Mining, Metallurgy, Mechatronics,
Prod., Automobile Branch)**

TECHNOLOGY MANAGEMENT

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) from each question is compulsory. Attempt any two parts from parts (b), (c) and (d) of each question.

Unit-I

I. (a) What is Technology?

2

- (b) State the types and characteristics of technology. 7
- (c) Explain the conceptual framework for MOT. 7
- (d) Explain the parameters of technological environment. 7

Unit-II

2. (a) What is Innovation? 2
- (b) Explain the components of innovation. 7
- (c) Discuss the types of innovation. 7
- (d) Explain invention Vs. innovation. 7

Unit-III

3. (a) What is S-curve? 2
- (b) Describe technology life cycle. 7
- (c) What is technology diffusion? Explain mechanism of diffusion. 7
- (d) Write short notes on : 7
- Technology Evolution

Unit-IV

4. (a) What is Technology Intelligence? 2
- (b) Explain Forecasting and Assessment. 7
- (c) What is technology strategy? Explain its types. 7
- (d) Discuss the models for technology strategy formulation. 7

Unit-V

5. (a) What is technology acquisition? 2
- (b) State and explain the types of technology transfer. 7
- (c) Give an overview of GATT. 7
- (d) Write short note on : 7
- Intellectual Property Rights

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B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme),

(CSE Engg. Branch)

SOFTWARE TECHNOLOGY

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. All questions have four parts. Part (a) is compulsory of 2 marks. Attempt any two parts from part (b), (c) and (d) of 7 marks each.

Unit-I

1. (a) What is object file format? 2
- (b) Define Addressing mode? Explain the classification of addressing modes in detail? 7

[2]

- (c) Explain the different types of register used in assembly language programming. 7
- (d) Describe the process of designing of Assembler in detail. 7

Unit-II

2. (a) Differentiate between linker and loader. 2
- (b) Explain the different types of loader in detail. 7
- (c) Describe the Position Independent Code. 7
- (d) What are different loader design option explain in brief? 7

Unit-III

3. (a) What is macro? How does it different from its subprogram? 2
- (b) What are the major data structures used in macro-processor? Explain in detail. 7
- (c) What are different macro processing techniques? 7

[3]

- (d) Describe the different macro processor design options. 7

Unit-IV

4. (a) Why we need a compiler in any operating system? 2
- (b) What is optimizing transformation? Explain in detail. 7
- (c) Generate the three address code for following code 7
- $$-(a \times b) + (c + d) - (a + b + c + d)$$
- (d) Describe the role of lexical analysis in detail. 7

Unit-V

5. (a) Define Text editor. 2
- (b) What do you mean by check points and reverse execution? Give the context of debugger. 7
- (c) Explain I detail data structure for text sequences. 7
- (d) Write short notes on the following : 7
- (i) Gap method
- (ii) Array method

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BE (8th Semester)

Examination, April-May 2021

Branch : CSE, IT

DATA MINING & WAREHOUSING

Time Allowed : Three Hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Sub question (a) of 2 marks is compulsory. Attempt any two sub questions of 7 marks from (b), (c), (d). Assume suitable data wherever necessary.

(2)

Q. 1. (a) What do you understand by data consolidation? 2

(b) Discuss the role of metadata in data warehouse and the multi dimensional data. 7

(c) With a block diagram explain the various aspects of a typical data warehouse architecture. 7

(d) How is a data warehouse different from a data base? How are they similar? 7

Q. 2. (a) State the significance of hierarchy of data. 2

(b) What is Dimensional Model? How does it differ from a Relational Model? 7

(c) Data consolidation is data modelling activity. This statement is true or not. Justify. 7

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(3)

- (d) Write short notes : 7
- (i) Data Extraction
 - (ii) Data Design
- Q. 3.** (a) What are the various forms of data preprocessing? 2
- (b) What are the different types of OLAP tools? Explain the key features of each of them. 7
- (c) What are the aspects of performance tuning a data warehouse? Explain them with example. 7
- (d) Write comparison between online analytical processing & online transaction processing. 7
- Q. 4.** (a) What is concept hierarchy? Give an example. 2
- (b) What are the methods of association rule mining? Explain them. 7

(4)

(c) What is clustering ? How does it differ from classification ? 7

(d) What are the different phases of the knowledge discover from database ? 7

Q. 5. (a) List the some applications of data mining. 2

(b) Discuss the importance of establishing a standardized data mining query language. What are the potential benefits and challenges involved in such a task ? 7

(c) What is a multimedia database ? Explain the methods of mining multimedia database ? 7

(d) Discuss Data Visualization with reference to Data Mining. 7

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322831(22)

**B. E. (Eighth Semester) Examination, April-May 2021
(New Scheme)**

(CSE Engg. Branch)

ARTIFICIAL INTELLIGENCE and EXPERT SYSTEMS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each question is compulsory and carries 2 marks and attempt two parts from (b), (c) and (d) and carry 7 marks each.

Unit-I

1. (a) Define Intelligence and Artificial Intelligence. 2
- (b) Explain Hill Climbing. In what situation it fails? What techniques can be applied to overcome these difficulties? 7

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[2]

- (c) Illustrate the concept of constraint-satisfaction AI-technique to solve the following crypt arithmetic problem : 7

CROSS + ROADS = DANGER

- (d) Explain Alpha-Beta pruning with example. 7

Unit-II

2. (a) What is Knowledge Agent? 2

- (b) What is Propositional Logic and how knowledge is represented using propositional logic? 7

- (c) Describe the meaning of the following Primitive Act in conceptual dependency with suitable example : 7

ATRANS, PTRANS, MBUILD, GRASP,
MTRANS, PROPEL, INGEST.

- (d) What are semantic networks and its classification? 7

Unit-III

3. (a) Define source of Uncertainty. 2

- (b) State Baye's theorem along with example. 7

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[3]

- (c) Write short notes on the following : 7

- (i) Dempster-Shafer Theory
(ii) Bayesian Belief Network (BBN)

- (d) Explain the difference among three main style of learning : 7

- (i) Supervised
(ii) Reinforcement
(iii) Unsupervised

Unit-IV

4. (a) Write short note on NLP. 2

- (b) Explain Backward chaining with suitable example. 7

- (c) Describe Block World Problem. 7

- (d) What is Parsing? Compare top-down and bottom-up parsing using suitable example. 7

Unit-V

5. (a) Name any 4 expert system. 2

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[4]

- (b) Draw the architecture of an expert system. Describe its major component and their inter relationship. 7
- (c) How knowledge acquisition and validation process is performed in expert system? Explain. 7
- (d) What is rule based system and when it is used? Draw a suitable diagram of its architecture. 7

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B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(CSE Engg. Branch)

ARTIFICIAL INTELLIGENCE and EXPERT SYSTEMS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

***Note : Attempt all questions. Part (a) is compulsory.
Attempt any two parts from (b), (c) and (d) of
each questions. Diagram is necessary
whenever if required.***

Unit-I

1. (a) Define Heuristic function. 2
- (b) Explain AO* algorithm with suitable example. 7
- (c) Explain Hill Climb algorithm with its limitations. 7

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[2]

- (d) Give the list of application area of artificial intelligence. 7

Unit-II

2. (a) What do you mean by WFF? 2
(b) What are the properties of a knowledge based system? Describe various knowledge representation techniques. 7
(c) How knowledge is represented using semantic Net? 7
(d) Give semantic representation for the following facts : 7
(i) Ram is taller than Harry.
(ii) Every Dog has bitter a politician.
(iii) Football is a Game. It is played by Ball it is popular in Europe.

Unit-III

3. (a) What do you mean by Fuzzy Logic? 2
(b) What is Baye's theorem? Give the limitation of Naive Bayesian system. 7

[3]

- (c) Differentiate between supervisd and unsupervised learning. 7
(d) Write short notes on : (any two) 7
(i) Bayesian Belief Network
(ii) Dempster Shafer Theory
(iii) Decision Tree

Unit-IV

4. (a) Derive a parse tree of the following sentence : 2
"Mohan slept on the Bench".
(b) Discuss the basic steps of Natural Language Processing (NLP). 7
(c) Differentiate between forward and backward reasoning. 7
(d) Discuss the partial order planning. Giving suitable example. 7

Unit-V

5. (a) Write any five name of expert system. 2

- (b) Draw the architecture of an expert system. Explain it. 7
- (c) Explain the process of knowledge Acquisition. 7
- (d) Explain rule based system with example. 7

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Roll No. :

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B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(CSE Branch)

DATA MINING & WAREHOUSING

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each question is compulsory. Solve any two of parts (b); (c) and (d).

Unit-I

1. (a) What are the key characteristics of a data-warehouse? 2

[2]

- (b) Explain three tier architecture of Datawarehouse with suitable example. 7
- (c) Discuss various usage and trends in data warehousing. 7
- (d) Write short notes on : 7
 - (i) Mata data
 - (ii) Project planning and management

Unit-II

- 2. (a) What is Fact Table? 2
- (b) What do you understand by data quality? Why it is important? Explain with respect to data warehousing. 7
- (c) Explain data extraction, transformation and loading. 7
- (d) What is Dimensional Model? Explain various schemes for representing multidimensional models. 7

Unit-III

- 3. (a) What are the OLAP hypercubes? 2
- (b) Explain various classes of users with their responsibilities in data warehousing. 7

[3]

- (c) Explain physical design process of data warehouse. 7
- (d) What is the relation between datawarehouse and web? Explain information delivery components. 7

Unit-IV

- 4. (a) What is Data Mining? 2
- (b) What is KDD? What are the various steps involved in KDD? Explain in brief. 7
- (c) What are the different techniques of data-mining? Explain any one of them. 7
- (d) Explain Clustering and Association Rules. 7

Unit-V

- 5. (a) What is Web Mining? 2
- (b) Define the term temporal and spatial mining with example. 7
- (c) What is Web Content Mining? What are the various outcomes which are expected after web mining? 7
- (d) Describe datamining task primitives. 7

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B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(CSE Branch)

DATA MINING & WAREHOUSING

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each question is compulsory. Attempt any two parts from (b), (c) and (d).

Unit-I

1. (a) .List out various characteristics of data warehouse. 2

[2]

- (b) Explain the three-tier data warehouse architecture and its various components. 7
- (c) Compare and contrast operational database system with data warehouse. 7
- (d) How many types of meta data in data warehouse? Explain in brief. 7

Unit-II

2. (a) Define Data Quality. 2
- (b) What do you mean by data mart? What are the different types of data mart? Explain in detail. 7
- (c) Explain various steps of ETL process. 7
- (d) Explain how OLAP technology helps in discovery driven exploration of data cubes. 7

Unit-III

3. (a) What are the objective of physical driven process? 2
- (b) What is the significance of OLAP in data warehouse? Describe OLAP operations with necessary example. 7

[3]

- (c) Describe various user classes with their working in data warehousing. 7
- (d) Mark a comparisons between the MOLAP and HOLAP. 7

Unit-IV

4. (a) Define Data Mining. 2
- (b) What are the different clustering methods? Explain in detail. 7
- (c) How does the Naive Bayesian classification work? Explain. 7
- (d) Discuss the various applications of association analysis. 7

Unit-V

5. (a) List out various data mining applications. 2
- (b) With a neat diagram explain the architecture of data mining. 7
- (c) What do you understand by web content mining? Explain with an example. 7

(d) Write short notes on following : (any two) 7

(i) Temporal mining

(ii) Spatial mining

(iii) Trends in data mining

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B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(CSE, IT Branch)

CYBER SECURITY

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

***Note : Attempt all questions. Part (a) is compulsory.
Attempt any two from (b), (c) & (d) from
each unit.***

Unit-I

1. (a) What is Cyber Crime and Criminals? 2
- (b) What are the Cyber Security concepts? 7

(c) Describe the types of Cyber Crime and Cyber Criminals. 7

(d) Define the principle of Web Securities. 7

Unit-II

2. (a) What is Cyber Attack? 2

(b) Explain Cyber fraud techniques. 7

(c) Explain Botnet and Fast flux. 7

(d) Write short notes on : 7

(i) Rogue antivirus

(ii) Use of Proxies

Unit-III

3. (a) What is Cyber Exploitations? 2

(b) Explain shell code and buffer overflows. 7

(c) What is SQL injection? Give suitable example. 7

(d) Explain Cross Site Scripting (XSS) and War Xing. 7

Unit-IV

4. (a) Explain the limitation of IT Acts. 2

(b) What is e-governance and Digital signature recognition? 7

(c) What is IT Act 2000 and act for Cyber Crime & offences? 7

(d) What is Cyber Regulation Appellate Tribunal and Penalties? 7

Unit-V

5. (a) What is Software Copyright? 2

(b) Explain and distinguish between IT Act and Civil Producer Code. 7

(c) Explain Patent Law and Trademark Law. 7

(d) Explain Online Dispute Resolution (ODR). 7

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B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(CSE, IT Branch)

CYBER SECURITY

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) is compulsory with 2 marks. Attempt any two from (b), (c) and (d) each question 7 marks.

Unit-I

1. (a) Define the term Cyber.
(b) Explain the concepts of Authentication, Authorization

[2]

and Confidentiality.

(c) What are the different types of Cyber Crimes?
Explain in brief.

(d) Write short notes on :

- (i) Cyber Crime
- (ii) Cyber Criminal
- (iii) AAA in Security concept

Unit-II

2. (a) Why attackers use proxies?
- (b) What do you mean by Phishing? Explain the role of malicious mobile code as a Fraud Technique.
- (c) Explain advanced fast flux with suitable diagram.
- (d) Explain Click Fraud in detail.

Unit-III

3. (a) Define exploitation in Web Space?
- (b) Explain the Race Conditions and DOS Conditions.

[3]

- (c) Explain DNS Amplification Attacks with example.
- (d) What is a brute force attack? Is strong encryption effective against brute force attacks? Explain.

Unit-IV

4. (a) Give the main difference between Digital Signature and Electronic Signature.
- (b) Explain IT ACT 2000 and its provisions.
- (c) Explain E-Governance and also give details about some E-governance project in India.
- (d) What are the steps for Legal Recognition of Digital Signature Certificate?

Unit-V

5. (a) What is Electronic Data Base and how can we protect it?
- (b) What are the issues related to Online Dispute Resolution (ODR).
- (c) Write brief on IT Act and Criminal Procedure Code.

(d) What are the Relevant Sections of Reserve Bank of India Act?

What is a price force attack? Is it a criminal offence? Explain effective against price force attacks. Explain.

Unit-V

(a) Give the main difference between Digital Signature and Electronic Signature

(b) Explain IT Act 2008 and its provisions

(c) Explain E-Governance and give details about some E-Governance project in India.

(d) What are the steps for Legal Recognition of Digital Signature Certificate?

Unit-V

(a) What is Electronic Data Base and how can we protect it?

(b) What are the issues related to Online Dispute Resolution (ODR)?

(c) Write brief on IT Act and Criminal Procedure Code

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Roll No. :

322840(22)

B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(CSE, IT Engg. Branch)

NEURAL NETWORK and FUZZY LOGIC

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each question is compulsory. Attempt any two parts from (b), (c) and (d) of each question.

Unit-I

1. (a) Define topology in neural network. 2
- (b) What are three main difference among three models of artificial neurons, namely McCulloh-Pitts perceptron and Adaline. 7

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[2]

- (c) Discuss the various neural network architecture in detail. 7
- (d) Explain the Perceptron learning algorithm in detail. 7

Unit-II

2. (a) What is Recall in neural network? 2
- (b) Describe memory models in neural network. 7
- (c) Explain credit assignment problem with neat diagram. 7
- (d) Differentiate between Supervised and Unsupervised learning strategies in detail. 7

Unit-III

3. (a) Define generalized Delta rule. 2
- (b) Explain the least mean algorithm in detail. 7
- (c) State and prove the perception convergence theorem. 7
- (d) Compare & contrast Adaline and Madaline. 7

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[3]

Unit-IV

4. (a) Define Talking Network. 2
- (b) Differentiate between Character and Handwritten recognition in detail. 7
- (c) Describe the different application of pattern recognition. 7
- (d) Discuss phonetic typewriter application. 7

Unit-V

5. (a) What is Fuzzy Associative Memory? 2
- (b) Explain various operations on fuzzy sets. 7
- (c) Describe fuzziness in neural network. 7
- (d) Describe defuzzification in detail. 7

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Roll No. :

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**B. E. (Eighth Semester) Examination,
April-May 2021
(New Scheme)**

(CSE, IT Engg. Branch)

DISTRIBUTED MULTIMEDIA

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

- Note :** (i) *Each unit contains four questions. Part (a) of each unit is compulsory. Attempt any two parts from (b), (c) and (d) of each unit.*
- (ii) *The figures in the right hand margin indicate marks.*

Unit-I

1. (a) What are the types of distributed system? 2

[2]

- (b) What do you mean by Image and Still video store?
Explain in details with example. 7
- (c) What is service agent? Explain with example object
directory service agent, component service agent
and user interface service agent. 7
- (d) With neat and labelled diagram explain clients in
distributed work group computing. 7

Unit-II

2. (a) What are the difference between traditional and
extended LAN's? 2
- (b) What are the types of multimedia server? Explain in
details. 7
- (c) Write short technical notes : 7
- (i) Write once read many optical disks
(ii) Optical disk library
- (c) Write a detailed note on Network Performance
issue. 7

Unit-III

3. (a) What is object definition? 2

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[3]

- (b) Write a detailed note on transaction management
for multimedia system. 7
- (c) What is inter server communication? With neat and
labelled diagram explain object server architecture
and object directory services. 7
- (d) Write short technical notes :
(i) Multimedia object retrieval
(ii) Object Migration Schemes 7

Unit-IV

4. (a) What is Key deliverables? 2
- (b) What do you understand by technology assessment?
Explain with labelled diagram Business information
model. 7
- (c) What is feasibility? Explain with neat and labelled
diagram current architecture of systems. 7
- (d) Write short technical notes :
(i) Impact of Performance issues on design
(ii) Performance analysis and Monitoring 7

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[4]

Unit-V

5. (a) What do you understand by system extensibility? 2
- (b) What is multimedia system design? Explain with neat and labelled diagram system design methodology. 7
- (c) What is storage management? Explain about Access Management and optimization of storage distribution. 7
- (d) Write short technical notes : 7
- (i) Object oriented multimedia system
 - (ii) System design analysis

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Roll No. :

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**B. E. (Eighth Semester) Examination,
April-May 2021
(New Scheme)**

(CSE, IT Engg. Branch)

REAL TIME SYSTEMS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

***Note : (i) Attempt all questions. Part (a) is compulsory
in all questions. Attempt any two parts from
(b), (c) and (d).***

***(ii) The figures in the right-hand margin indicate
marks.***

Unit-I

1. (a) What is real time system?

2

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[2]

- (b) What are the different phases of software life cycle model? Explain each with neat & clean diagram. 7
- (c) List & explain various terminologies used in Real Time System. 7
- (d) Write short notes on : 7
- (i) Code generation
 - (ii) Memories

Unit-II

2. (a) What is flow chart? 2
- (b) What is the use of finite state autometer in real time system? 7
- (c) Discuss about priority driven scheduling with an example. 7
- (d) What are the applications of flow chart, structure charts, Pseudocode? Explain each with suitable example. 7

Unit-III

3. (a) What are the needs and disadvantages of Dynamic Memory allocation? 2

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[3]

- (b) What are the essential condition for deadlock? Write also about deadlock preventions and deadlock avoidance. 7
- (c) What are mail boxes? Also explain mail boxes implementation and its critical regions. 7
- (d) "Round Robin Scheduling does not work for the real time application." Comment on statement. 7

Unit-IV

4. (a) What is the difference between white box testing and Black box testing? 2
- (b) Discuss application of Queuing theory with suitable example. 7
- (c) How Non Von Nueman concept is used in Modern Parallel Computing architecture? 7

Unit-V

5. (a) Write the name of any four real time system software. 2
- (b) Explain how to hardware redundancy in the issue of voting and consensus? 7

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(c) Explain briefly Real Time Databases. 7

(d) Write short notes on :

(i) Fault, failure and bugs with example

(ii) Real time system Vs. Complex system 7

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B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(CSE Engg. Branch)

INTERNET and MULTIMEDIA TECHNOLOGY

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Question (a) of each unit is compulsory and carry 2 marks each. Attempt any two part from questions (b), (c) and (d) carrying 7 marks each.

Unit-I

1. (a) Explain ping and tracert commands.
(b) Explain Transmission Control Protocol.

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- (c) Write in detail about firewalls and basic type of firewall.
- (d) Write IP datagram format in brief. Discuss differentiated service/service type, flags and fragmentation offset.

Unit-II

- 2. (a) How ISDN uses out of band signalling?
- (b) Write difference between B-ISDN and N-ISDN.
- (c) Explain working of data link layer and physical layer.
- (d) Draw and explain ISDN protocol stack. Also write down ISDN focussing on ISDN principle.

Unit-III

- 3. (a) Define Piconet and Scatternet.
- (b) Explain hidden and exposed terminal problem related with MACO problem.
- (c) Write short note on signaling system number.
- (d) Explain LMDS.

[3]

Unit-IV

- 4. (a) Explain the term hyper text and hyper media.
- (b) What do you mean by CODEC? Describe the steps of JPEG image compression.
- (c) Write down the difference between inter frame and intra frame compression.
- (d) Why compression is required? What is the difference between lossless and lossy compression technique?

Unit-V

- 5. (a) Write two application of multimedia.
- (b) Discuss the different type of multimedia services in detail.
- (c) Explain the design of Video-on demand system.
- (d) Write short note on the following : (any two)
 - (i) MPEG 7
 - (ii) IEEE 1394 interface
 - (iii) MMX instruction set

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B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(CSE Engg. Branch)

INTERNET and MULTIMEDIA TECHNOLOGY

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (b) of each question is compulsory and carrying 2 marks each and attempt two parts from (b), (c) and (d) carrying 7 marks each. Draw labelled diagram to support your answer and state assumption clearly if any.

Unit-I

1. (a) Define Firewall.

2

[2]

- (b) Explain TCP/IP protocol suite with different protocols in each layer. 7
- (c) Explain the working of ARP and RARP protocol. 7
- (d) A company is granted the class C site address 201.70.64.0 the company needs six subnet. Design the subnet. 7

Unit-II

- 2. (a) What are the different types of cable media used in computer network? 2
- (b) Give reason why separate network for signaling is required in modern telephone network and explain the devices and protocol stack of signaling system 7 (SS7). 7
- (c) Draw the ATM reference model and write the function of each layer of ATM reference model. 7
- (d) Explain the services provided by the different layers in ISDN. 7

Unit-III

- 3. (a) Define wireless network. 2

[3]

- (b) Explain MACAW protocol for wireless LAN. 7
- (c) Define mobile IP and explain the 03 phases of data transfer in mobile IP. 7
- (d) Explain the Bluetooth and its type. 7

Unit-IV

- 4. (a) Define temporal and non-temporal media. 2
- (b) Explain LZW compression algorithm. Encode the string "BAABABBBBAABBBBAA" using LZW algorithm. 7
- (c) Briefly state the Huffman coding algorithm with example? 7
- (d) Describe briefly outline the JPEG compression pipeline and the constituent compression algorithms employed at each stage in the pipeline. 7

Unit-V

- 5. (a) What is IEEE 1394? 2
- (b) What is MMX technology instruction? Also explain the data type and instruction set of MMX technology instruction. 7

- (c) Describe content based image retrieval with example. 7
- (d) Explain the Earliest deadline first algorithm (EDF) and write the condition to determine whether the task set is schedulable by EDF. 7

Unit-17

4. (a) Explain the Huffman coding algorithm with an example.

(b) Explain the LZW compression algorithm with an example.

(c) Explain the JPEG compression algorithm with an example.

(d) Explain the H.264 video compression algorithm with an example.

(e) Explain the H.264 video compression algorithm with an example.

(f) Explain the H.264 video compression algorithm with an example.

(g) Explain the H.264 video compression algorithm with an example.

(h) Explain the H.264 video compression algorithm with an example.

(i) Explain the H.264 video compression algorithm with an example.

Unit-18

5. (a) Explain the H.264 video compression algorithm with an example.

(b) Explain the H.264 video compression algorithm with an example.

(c) Explain the H.264 video compression algorithm with an example.

(d) Explain the H.264 video compression algorithm with an example.

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**B. E. (Eighth Semester) Examination,
April-May 2021**

(New Scheme)

(CSE, IT Branch)

SOFTWARE TESTING

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each question is compulsory. Attempt any two part from (b), (c) & (d).

Unit-I

1. (a) Define Software Quality. 2
- (b) Define Software testing. Explain the concept of complete testing. 7

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- (c) How test planning and design help in software testing?
Explain it. 7
- (d) Describe the concept of software testing team and management. 7

Unit-II

2. (a) Define Unit Testing. 2
- (b) Explain theory of Goodenough and Gerhart. 7
- (c) Explain theory of gourlay. 7
- (d) List out and explain limitation of testing. 7

Unit-III

3. (a) Define Control flow testing. 2
- (b) Write a program to calculate area of circle? Draw flow chart. Draw flow graph and calculate number of independent path. 7
- (c) Compare between data flow and test selection criteria. 7
- (d) Explain in detail testing of domain errors. 7

[3]

Unit-IV

4. (a) Define system testing. 2
- (b) Explain in detail Requirement identification. 7
- (c) Explain acceptance testing and its types. 7
- (d) Describe in brief structure of system test plan. 7

Unit-V

5. (a) Define quality assurance. 2
- (b) List out and explain five views of software quality. 7
- (c) Explain in detail CMM and its level. 7
- (d) Write short notes on : 7
- (i) SQA Plan
- (ii) ISO 9000

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**B. E. (Eighth Semester) Examination,
April-May 2021**

(New Scheme)

(CSE, IT Branch)

SOFTWARE TESTING

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each question is compulsory. Attempt any two parts from (b), (c) & (d).

Unit-I

1. (a) What is Regression Testing? 2

[2]

- (b) Describe test tool and Automation in detail. 7
- (c) Explain Test planning and Design. 7
- (d) Difference between structural testing and functional testing. 7

Unit-II

2. (a) What is Validation and Varification? 2
- (b) Explain theory of Goodenough and Gerhart. 7
- (c) Explain theory of Weyuker and Ostrand. 7
- (d) What is static unit testing (Code Review) and Dynamic unit testing? 7

Unit-III

3. (a) What is Debugging? 2
- (b) Comparison between Data flow and test selection criteria. 7
- (c) Explain Domain Error and testing of domain error. 7
- (d) What is control flow testing and control flow graph? 7

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Unit-IV

4. (a) Explain Taxonomy of system test. 2
- (b) Write down types of Acceptance testing. 7
- (c) Explain structure of system test plan. 7
- (d) Describe test objective identification in detail. 7

Unit-V

5. (a) What is Software reliability? 2
- (b) Describe Capability Maturity Model. 7
- (c) Short notes on : 7
- (i) Quality Control
 - (ii) Quality assurance
 - (iii) Cost of Quality
- (d) What do you understand by Software Quality assurance? 7

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Roll No. :

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B. E. (Eighth Semester) Examination, April-May 2021

(New Scheme)

(CSE Engg. Branch)

WIRELESS NETWORKS

Time Allowed : Three hours

Maximum Marks : 80.

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each unit is compulsory. Attempt any two parts from (b), (c) and (d) of each unit.

Unit-I

1. (a) Define fading. 2
- (b) Explain in detail about any one first generation wireless communication network standard. 7

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[2]

- (c) Describe the large scale path loss and shadowing in detail. 7
- (d) Explain multipath propagation in detail. 7

Unit-II

2. (a) Define Modulation. 2
- (b) Write in detail about various receiver techniques for fading dispersive channels. 7
- (c) Explain in detail about MPSK modulation. 7
- (d) Explain signal space and decision region. 7

Unit-III

3. (a) Define Frequency Reuse. 2
- (b) Explain cellular communication in detail. 7
- (c) Write short notes on : (any two) 7
- (i) Cell splitting
 - (ii) Call blocking
 - (iii) Cell sectoring

[3]

- (d) Explain co channel and adjacent channel interference in detail. 7

Unit-IV

4. (a) Define CSMA. 2
- (b) Explain in detail about location management in cellular network. 7
- (c) Discuss about various handoff strategies. 7
- (d) Write short notes on : (any two) 7
- (i) FDMA
 - (ii) Traffic calculation
 - (iii) Conflict free multiple access

Unit-V

5. (a) Define MANET. 2
- (d) Explain mobile IP in detail. 7
- (c) Explain the architecture of wireless application protocol and its layers. 7

(d) Discuss how the transmission control protocol behaves in wireless networks.