B. Tech. 7th Semester (CSE) G-Scheme Examination,

December–2025

NEURAL NETWORKS

Paper–PCC-CSE-401G

Time allowed : 3 hours]   [Maximum marks : 75

Note : **Question No. 1 is compulsory.** *Attempt total* **five** *questions, selecting* **one** *question from each section. All questions carry equal marks.*

1. Answer the following :   6×2.5=15

   (a) Define Artificial Neural Network and its key components.

   (b) Differentiate between biological and artificial neuron models.

   (c) What is the significance of activation functions ? Give examples.

   (d) Explain the concept of supervised and unsupervised learning with examples.

   (e) Mention two real-world applications of neural networks.

3533–P–3–Q–9 (25)   [P.T.O.

(f) What is backpropagation ? Briefly explain its importance.

Section–A

2. (a) Explain the basic structure and working of an Artificial Neural Network.   8

   (b) Discuss Sigmoid and ReLU function with examples.   7

3. Describe the different architectures of Artificial Neural Networks (ANN).   15

Section–B

4. Design a perceptron network to classify linearly separable data by taking a suitable example.   15

5. Compare and contrast McCulloch-Pitts, Hebb, and Perceptron models.   15

Section–C

6. (a) Describe the architecture of a Backpropagation Network.   8

   (b) Compare and contrast Hebbian Learning and Competitive Learning.   7

7. (a) Discuss the challenges associated with the Gradient Descent algorithm. How can techniques like Stochastic Gradient Descent help address these issues ?   8

   (b) Differentiate between supervised and unsupervised learning, providing an example for each.   7

Section–D

8. (a) Differentiate between auto-associative and hetero-associative memory.   7

   (b) Describe the architecture of an auto-associative memory.   8

9. What is Bidirectional Associative Memory (BAM) ? Explain its architecture and the purpose of the forward and backward passes.   15

B.Tech. 7th Semester (CSE) G-Scheme Professional

Elective–IV Examination, December–2025

WEB MINING

Paper–PEC-CSE-405G

Time allowed : 3 hours]   _[Maximum marks : 75_

Note : _**Question No. 1 is compulsory.** Attempt total **five** questions selecting **one** question from each section. All questions carry equal marks._

1. Answer the following :   2.5×6

   (a) List two subtasks of web mining.

   (b) What is Latent Semantic Indexing used for ?

   (c) Define Computational intelligence with an example.

   (d) What is the purpose of hybridization in swarm techniques ?

   (e) What is the difference between Web content mining and Information extraction ?

   (f) What is the main idea of evolutionary computation ?

3535–P–3–Q–9 (25)   [P.T.O.

Section—A

2. Describe the process of discovering knowledge from hypertext data with examples of real-world applications.

15

3. Explain the basic concepts of data mining and its significance in knowledge discovery. Give suitable examples.

15

Section—B

4. (a) Describe one method for clustering web pages.

7

(b) Explain Classification of Web Pages and its importance in web mining.

8

5. Explain the Information Retrieval (IR) models in detail. Compare at least two models with examples.

15

Section—C

6. Describe the classification of optimization algorithms. Compare any two types of algorithms in detail.

15

7. (a) Briefly explain the difference between discrete and continuous optimization problems.

8

(b) What is Swarm intelligence ? Give one example of its application.

7

Section—D

8. Describe the working of Artificial Bee Colony (ABC) Algorithm and Firefly Algorithm. Compare their effectiveness in optimization problems.

15

9. Discuss Particle Swarm Optimization (PSO) in detail. Explain its applications in real world problems.

15

**B. Tech. (CSE) 7th Semester Professional Elective-V
(G- Scheme) Examination, December-2025**
SOFTWARE TESTING
Paper : PEC-CSE-413G

Time allowed : 3 Hours]   *[Maximum marks : 75*

Note : Attempt **five** questions in all selecting at least **one** question from each section. **Question No.1 is compulsory.**

1.   Answer **all** parts briefly.   6×2.5=15

   (a)   Define SDLC and STLC.

   (b)   What are the limitations of software testing?

   (c)   Define integration testing with example.

   (d)   What is gray box testing?

   (e)   Write two advantages of automated test case generation.

   (f)   Differentiate between regression and retesting

Unit-I

2.   (a)   Explain the difference between defect, error, and failure.   8

   (b)   Discuss the seven principles of software testing with examples.   7

3.   (a)   Explain in detail the objectives and limitations of software testing. Illustrate with real-world examples.   15

3539-P-2-Q-9 (25)   [P.T.O.

Unit-II

4. (a) Describe the process of test case planning and documentation. 8

(b) Explain the V-Model and its relevance to testing stages. 7

5. Design a test case for a login module (username and password) and explain the rationale behind each test case. 15

Unit-III

6. (a) What are the steps in reporting a software bug? 7

(b) Discuss the characteristics of a good problem report. 8

7. (a) Differentiate between white box and black box testing. 8

(b) Explain the concept and benefits of gray box testing. 7

Unit-IV

8. (a) Discuss various types of testing tools with examples. 9

(b) What are the advantages of regression testing? 6

9. (a) Explain the need for prioritization of test cases. 8

(b) Compare manual vs automated testing using any one real-world tool. 7

B.Tech. (CSE) Open Elective-I, 7th Semester

G-Scheme Examination, December-2025

FUNDAMENTALS OF MANAGEMENT

Paper-HSMC-08-G

Time allowed : 3 hours] *[Maximum marks : 75*

Note : *Attempt five questions in all, selecting one question from each section. Question No. 1 is compulsory.*

Section-I

1. Explain the following concepts : 6×2½=15

   (a) Promotion and Recruitment

   (b) Material Management

   (c) Advertising

   (d) Importance of Capital in Financial Management

   (e) Material Management

   (f) Financial Management

Section-II

2. Describe Management Functions and levels of Management. Explain inter-relationship of Managerial functions. 15

3544-P-2-Q-9 (25) [P.T.O.

3. Write short note on : $2 \times 7\frac{1}{2} = 15$

   (a)   Types of Recruitment.

   (b)   Objectives and types of Training.

Section-III

4. Discuss about Production Planning in detail. What are the stages in production planning and control ?   15

5. Define Material Management. Explain its features and significance in detail in Production Planning.   15

Section-IV

6. Explain the Process and significance of Marketing Research.   15

7. What are the objectives and functions of Marketing Management ?   15

Section-V

8. Write the importance and functions of Financial Management.   15

9. What are the various sources of finance ?   15