GAYATRI VIDYA PARISHAD COLLEGE OF ENGINEERING FOR WOMEN
(AUTONOMOUS)
(Affiliated to Andhra University, Visakhapatnam)
I B.Tech. - I Semester Regular Examinations, December / January – 2025
Fundamentals of Computers
(Common to CSE, IT, CSE-AI&ML)
1. All questions carry equal marks
2. Must answer all parts of the question at one place

Time: 3Hrs.   Max Marks: 70

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DETAILED SCHEME OF VALUATION
UNIT-I

1. (a) Discuss about various Components of a computer with a neat diagram.
Introduction to Computer Components – 1 mark
Detailed explanation of components:
Input Devices – 1 mark
Output Devices – 1 mark
Storage Devices – 1 mark
CPU (ALU, Control Unit, Registers) – 2 marks
Neat Diagram – 1 mark

1.(b) Differentiate between various Biometric Devices along with merits and demerits.
Introduction to Biometric Devices – 1 mark
Types of Devices with Examples (e.g., fingerprint, retina, voice) – 2 marks
Merits of Biometric Devices – 2 marks
Demerits of Biometric Devices – 2 marks

2. (a) Explain the evolution and development of Computers.
Introduction to Evolution – 2 marks
Stages of Development (Generations):
First Generation – 1 mark
Second Generation – 1 mark
Third Generation – 1 mark
Fourth Generation – 1 mark
Fifth Generation – 1 mark

2.(b) Summarize the merits and demerits of Voice Response Systems.
Definition and Overview of Voice Response Systems – 3 mark
Merits of Voice Response Systems – 2 marks
Demerits of Voice Response Systems – 2 marks

UNIT-II

3. (a) Differentiate between Primary Memory and Secondary Memory.
Definition of Primary Memory – 1 mark
Definition of Secondary Memory – 1 mark
Key Differences with Examples – 5 marks

3.(b) Explain the different types of memory organization with examples.
Introduction to Memory Organization – 1 mark
Main Memory Organization (RAM, ROM) – 2 marks
Cache Memory Organization – 2 marks

Virtual Memory Organization – 2 marks

4. (a) Define Processor Registers. Explain Cache Memory in detail.
Definition of Processor Registers – 1 mark
Types of Registers (Examples) – 2 marks
Definition and Purpose of Cache Memory – 1 mark
Levels of Cache Memory (L1, L2, L3) – 2 marks
Importance of Cache Memory – 1 mark

4.(b) Outline the difference between Sequential and Random Access Memory.
Definition of Sequential Access Memory – 1 mark
Definition of Random Access Memory – 1 mark
Key Differences with Examples – 5 marks

UNIT-III
5. (a) Distinguish between different types of computer software.
Definition of Computer Software – 1 mark
System Software – 3 marks
Application Software – 3 marks

5.(b) What are the different phases of program development life cycle?
Definition of Program Development Life Cycle – 1 mark
Phases (e.g., Problem Definition, Design, Coding, Testing, Debugging) – 5 marks
Conclusion – 1 mark

6. (a) What are the different generations of Programming Languages?
Introduction to Programming Language Generations – 2 mark
First Generation (Machine Language) – 1 mark
Second Generation (Assembly Language) – 1 mark
Third Generation (High-Level Languages) – 1 mark
Fourth Generation (Declarative Languages) – 1 mark
Fifth Generation (AI and Expert Systems) – 1 mark

6.(b) Define software. Explain briefly and different Database Management Software.
Definition of Software – 2 mark
Types of Software – 2 marks
Definition of DBMS – 2 mark
Examples of DBMS (e.g., MySQL, Oracle, MongoDB) – 1 mark

UNIT-IV
7. (a) Classify different Network topologies and also mention the applications of each.
Definition of Network Topologies – 1 mark
Types (Bus, Star, Ring, Mesh, Hybrid) – 3 marks
Applications of Each Topology – 3 marks

7.(b) Illustrate Three Schema Architecture in Database Systems.
Definition of Three Schema Architecture – 1 mark
Layers (External, Conceptual, Internal) – 4 marks
Diagram – 2 marks

8. (a) Define Operating System. What are the different types of Operating Systems?

Definition of Operating System – 2 marks
Types of OS (Batch, Time-Sharing, Real-Time, Distributed, Network OS) – 5 marks

8.(b) What are the physical components of computer networks? Give Examples.
Definition of Physical Components – 1 mark
Components (Cables, Switches, Routers, etc.) – 4 marks
Examples of Each Component – 2 marks

UNIT-V
9. (a) Differentiate between Artificial Intelligence, Machine Learning, and Deep Learning.
Definition of AI, ML, DL – 2 marks
Key Differences – 5 marks

9.(b) Write about various applications of Artificial Intelligence in Agriculture.
Introduction to AI in Agriculture – 2 marks
Applications (Precision Farming, Crop Monitoring, Weather Forecasting, etc.) – 5 marks

10. (a) What is the significance of Data Model in Data Science?
Definition of Data Model – 2 marks
Significance (Organization, Analysis, Scalability, etc.) – 5 marks

10.(b) Discuss any Data Science application with use case diagram.
Introduction to the Application – 2 marks
Explanation of the Application – 3 marks
Use Case Diagram – 2 marks

Prepared by

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