Question 1: MCQs (20 Marks)

Each MCQ = 2 marks

1. Primary role of a Hypervisor → **C) Create and manage virtual machines**
2. Server Virtualization best described as → **B) Partitioning a physical server into multiple virtual servers**
3. Example of Type 1 Hypervisor → **C) Microsoft Hyper-V**
4. Server role used to assign IP addresses automatically → **B. DHCP**
5. RAID level with striping + parity → **C) RAID 5**
6. Advantage of RAID → **B) Increased data redundancy and fault tolerance**
7. Tool essential for ADDS installation → **B) Server Manager**
8. Primary function of DNS Server → **B) Resolve domain names into IP addresses**
9. Feature of DHCP → **B) Facilitate dynamic allocation of IP addresses**
10. Tool to test network connectivity → **B) Ping command**

Marks: 10 questions × 2 = 20 marks

Question 2: Matching (14 Marks)

Each correct match = 2 marks

1. File Server → **G) Provides centralized storage for files**
2. Web Server → **D) Hosts websites and delivers web pages**
3. Database Server → **E) Stores and manages data in structured formats**
4. Mail Server → **A) Stores and manages emails**
5. Application Server → **B) Provides backend services and business logic**
6. Proxy Server → **F) Intermediary for requests, enhances security/caching**
7. DNS Server → **C) Resolves domain names into IP addresses**

Marks: 7 × 2 = 14 marks

Section B (60 Marks)

Each question = 15 marks

Question 3 (15 Marks)

1. Identify and describe two types of server virtualization (e.g., Full Virtualization, Para-Virtualization, OS-level Virtualization). → **6 marks (3 each)**
2. List two key benefits (e.g., cost savings, resource optimization, scalability, fault tolerance). → **4 marks (2 each)**
3. Clarity, completeness, examples → **5 marks**

Question 4 (15 Marks)

Define:

- Server → computer providing services/resources (3 marks)
- Client → device/software accessing server resources (3 marks)
- Hypervisor → software managing VMs (3 marks)
- Virtualization → creating virtual versions of hardware/software (3 marks)
- Virtual Machine → emulated computer system (3 marks)

Marks: 5 × 3 = 15 marks

Question 5 (15 Marks)

Fill in blanks:

1. Fault Tolerance
2. Redundancy
3. Parity Bit
4. Mirroring
5. Striping

Marks: 5 × 3 = 15 marks

Question 8 (15 Marks)

Scenario-based:

1. **Essential hardware requirements** (e.g., CPU with virtualization support, sufficient RAM, storage, NICs, UPS). → **7 marks**
2. **Essential software prerequisites** (e.g., Windows Server OS, drivers, Active Directory, DNS/DHCP roles). → **7 marks**
3. Presentation, clarity → **1 mark**