MERN + GenAI COMPLETE PLACEMENT ROADMAP

Goal: Crack Campus + Off-Campus Jobs (Job ASAP)

1. MERN Stack – Core Topics to Master

1 HTML, CSS, JavaScript ES6+ fundamentals

2 React: components, props, state, hooks, routing

3 Node.js basics and async programming

4 Express.js: routing, middleware, MVC pattern

5 MongoDB: CRUD, schema design, indexing

6 Authentication: JWT, role-based access

7 REST API design and error handling

2. Backend & Database Essentials

1 API validation and pagination

2 File uploads (images, PDFs)

3 Environment variables and config management

4 SQL basics (SELECT, JOIN, GROUP BY)

5 Production-ready backend structure

6 Deployment basics (Render, Railway, Vercel)

3. GenAI Fundamentals (Conceptual)

1 What is Generative AI and LLMs

2 Tokens, context window, temperature

3 Hallucinations and limitations

4 Prompt vs RAG vs fine-tuning

4. Prompt Engineering (High ROI)

1 Zero-shot, one-shot, few-shot prompting

2 Persona-based prompting

3 Structured output (JSON)

4 Prompt iteration strategy

5. LLM APIs Integration

1 OpenAI and Gemini APIs

2 Chat completion and streaming

3 API error handling

4 Token usage and cost awareness

6. Embeddings & RAG (Most Important)

7. Placement-Winning Projects & Blueprints

Project 1: Enterprise Knowledge Assistant (MANDATORY)
Blueprint: Upload PDFs → Chunk → Embed → Store in Vector DB → User Query → Similarity Search → Context Injection → LLM Answer.

Project 2: AI Brochure Generator
Blueprint: Company URL → Web Scraping → Text Cleaning → Prompt Builder → LLM → Marketing Brochure.

Project 3: Customer Support Chatbot (RAG + UI)
Blueprint: FAQ Docs → RAG Pipeline → Chat UI → Contextual Answers with Memory.

Project 4: AI Resume Analyzer
Blueprint: Resume Upload → Text Extraction → Prompt Engineering → LLM Feedback & Scoring.

8. Interview & Placement Preparation
1 Explain RAG clearly

2 Explain project architecture

3 SQL and backend interview questions

4 GenAI trade-offs and cost control

5 Campus aptitude and DSA basics

9. Topics to Skip for Now
1 RNN, LSTM, Transformer math

2 Fine-tuning models

3 Agentic AI, LangGraph, MCP

4 Heavy Docker, Kubernetes, AWS deep dive

Final Advice
Master 1–2 deep GenAI + MERN projects. Focus on clarity, deployment, and explanation. Projects get jobs, not certificates.