NOTES

Annexure to the Minutes of Departmental Committee Meetings held on 11th & 13th November, 2024 (Item – VII)

Entrance Examination Syllabus for the year 2025 and onwards for 5-year Integrated Masters Programme in Data Science & Artificial Intelligence (FYIMP in DS & AI)

Note: There shall be sixty questions, each carrying one mark. Weightage to be given to each section is given within parenthesis. Paper setters are required to set the required number of multiple choice type questions with only one correct or most appropriate answer, separately for each section, giving uniform representation to the whole syllabus contained.

Unit I: Logical Reasoning **(06)**
Analogies, Syllogisms, Statement and conclusions, Statement and arguments, Blood relations, Direction sense tests, Seating arrangement (linear and circular), Puzzles (based on arrangements, comparisons, etc.), Venn diagrams, Coding and decoding, Arithmetic number series

Unit II: English Language and Comprehension **(06)**
Vocabulary, Spot the Error, filling in blanks with appropriate words, Synonyms/Homonyms, Antonyms, Spellings/ Detecting misspelt words, Idioms & Phrases, one-word substitution, Active/ Passive Voice of Verbs, Conversion into Direct/ Indirect narration, Reading Comprehension

Unit III: Sets, Relations and Functions **(06)**
Sets, Relations and Functions- Definition and types of sets, Operations on sets, Types of relations and functions, Domain, range, and codomain, Composite functions and inverse functions

Unit IV: Calculus **(06)**
Limits and Continuity-Concept of limits and continuity of functions, Differentiation, application of derivatives, integration and differential equations

Unit V: Statistics and Probability **(06)**
Probability concepts and statistical data handling, Conditional probability, Introduction to random variables and distributions.

Unit VI: Algebra **(06)**
Quadratic equations and roots, Sequences and series, Matrices and determinants- properties, applications.

Unit VII: Computer Networks **(06)**
Types of Networks- LAN, MAN, WAN, PAN, and other network types, Topologies and network structures, Basics of IP addressing, Overview of the Internet and web communication, Browsers and Online Communication- Web browsers and their functions, Email, messaging, and other online communication tools

Unit VIII: Programming Concepts **(06)**
Basic Programming Concepts and Introduction to Algorithms, data types, control structures (if, for, while), function, recursion and object oriented programming basics.

Unit IX: Data Structures and Data Handling **(06)**
List, string and data manipulation, Data Structures-Introduction to stacks and queues, linked lists (singly, doubly linked),

Unit X: Boolean Algebra **(06)**
Boolean Algebra and Logic Gates- Basics of Boolean algebra, Common logic gates (AND, OR, NOT, XOR), Simple circuit design and truth tables.