Graphic Era University

MCA 1st Semester

Syllabus of Career Skills

Course Code: L T P C

Course Name: Career Skills

Learning Outcomes:

LO 1 Apply logic to the different types of arrangement based questions and arrive at solutions to deterministic and non deterministic question sets.

LO 2 Apply the concept of blood relations and learn to draw a family tree using the different notations.

LO 3 Differentiate between the various types of conditions given in a grouping problem and assimilate the conditions given to solve the question set.

LO 4 Solve the different types of questions based on orientation of direction and understanding of distances and turns.

LO 5 Learn to construct a Venn diagram using multiple statements and arrive at conclusions or possibilities based on logic.

LO 6 Comprehend different types of data sets used in Data Interpretation and use quick calculation techniques for solving different types of questions.

LO 7 Discern an understanding of grammatical structures using the Concept of Subject Verb Agreement, conditionals ,Tenses etc in conversations and discussions including academic discourse settings.

UNIT 1: **6 Hours**

(2 hours lecture + 3 hours tutorial)

Introduction to reasoning, basic concepts and practice of deterministic and non deterministic arrangement based questions (linear, vertical, circular and rectangular).

Concepts and understanding of deterministic and non deterministic tabular or grid based questions including understanding of variables and their entries in the solution table. Practice of tabular or grid based question sets.

UNIT 2: **5 Hours**

(2 hours lecture + 2 hours tutorial)

Blood relation concepts including basic introduction, making a family tree, standard notations and names for gender and relations. Discussion of different types of questions asked in blood relations, their solutions and practice.

Concepts and practice of grouping/team formation or condition based questions including the understanding and application of different conditions used in grouping sets.

UNIT 3: **6 Hours**

(3 hours lecture + 3 hours tutorial)

Basic concept and understanding of directions including the orientation of the 4 basic directions of east, west, north and south. Understanding turns of different degrees towards right, left, clockwise and anticlockwise.

Basic concept of coding-decoding using alphabets, digits, words and their combinations. Understanding and practice of different questions in coding decoding.

Basic concept of series completion using numbers, alphabets, and their combinations thereof. Understanding of different types of series (based on differences, based on products, based on exponentials). Practice of different questions in coding decoding.

UNIT 4: **5 Hours**

(2 hours lecture + 3 hours tutorial)

Understanding the concepts of Syllogism using venn diagram, types of problems in syllogism (2 statements, 3 statements and 6 statement problems). Understanding the concepts of Data Sufficiency and types of questions.

UNIT 5: **4 Hours**

(2 hours lecture + 2 hours tutorial)

Understanding the concept of cubes and dice, types of questions asked and their standard solution. Mathematical reasoning including puzzle based questions based on weight, conditions, possibilities and logic.

UNIT 6: **4 Hours**

(2 hours lecture + 2 hours tutorial)

Introduction to Data Interpretation (DI), understanding different methods of data representation including tabular, bar graph, pie chart, line graph and caselet. Techniques of quick arithmetic calculations, concepts of percentage as applicable in DI, growth and growth rate and practice of various DI sets.

UNIT 7: Applied Grammar & Usage I

(7hours lecture+3hours tutorial) a. Subject Verb Agreement

b. Conditionals

c. Comparison Based Errors (Adjectives)

d. Tenses

UNIT 8 : Sentence Completion
(3hours lecture + 2 hours tutorial)

Application of Vocabulary (Pure and Contextual)

Reference books and study material:

1. Lalit Singh and P.A.Anand, verbal ability and reasoning for competitive exams, Wiley

2. R.S.Aggarwal, verbal and non-verbal reasoning for competitive exams.

3. Shakuntala Devi, puzzles to puzzle you, Orient Paperbacks.

4. George Summers, puzzles and teasers, Jaico Publishing.

5. P.A.Anand, reasoning book, Savera publication.

6.Arihant Publications ,Objective General English.

- Teacher: RICHA ALAGH
- Teacher: Suhail Vij

TMC-106 Scripting Languages

Scripting Languages : A subject to help students to learn different scripting languages like HTML, CSS, Javascript, jQuery and PHP

- Teacher: Neelam Singh

TMC 103 Operating Systems

- Teacher: Dr.Dinesh Chandra Dobhal

Discrete Structure and Combinatorics (TMC-104)

Unit No.	CONTENT
1	Sets, Relations and Functions: Countable and Uncountable sets, Relations and their types and compositions, Partial order relations and Hasse's diagram; Composition of functions, Inverse of functions, recursively defined functions.
2	Propositional Logic and Mathematical Induction Basic logical operations, Tautologies, Contradictions, Algebra of proposition, Logical implication, Logical equivalence and Validity; Normal forms, Rules of Inference, Predicates and Quantifiers; Mathematical Induction.
3	Combinatorics and Discrete Numeric Functions Fundamental Principles, Factorial Notations, Permutations and Combinations; Pigeonhole principle, Binomial Theoram and Multimonial coefficients; Discrete Numeric Functions, Recurrence relations and Generating Functions.
4	Group Theory Semi group, monoid, Group, Abelian Group, Subgroup and their properties, Cyclic group, Cosets, Lagrange's theorem, Permutation groups, Homomorphism, Isomorphism and Automorphism of Groups; Ring, Integral Domain and Field.
5	Graph Theory Defination and applications of Graph; types of graph; SubGraph, isomorphic graph, Eulerian and Hamiltonian graph; Operation and representation of graphs; Planar graph and Coloring of graphs;

- Teacher: Dr.Seema Saini

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