

Appendix: NPAT 2018 QP Structure and Syllabus

The NPAT 2018 will have 2 shifts – (1) on 12th May 2018 and (2) on 13th May 2018.

There will be 2 Papers in each shift:

- 1) Common : Only Paper I – with 3 sections detailed below
- 2) Design : Paper I & Paper II – with 3 sections detailed further below.

Paper	Section	Section Detail	No. of Questions	Time in Minutes
Paper I	1	Quantitative & Numerical ability	40	100 mins.
	2	Reasoning & General Intelligence	40	
	3	Proficiency in English Language	40	
	Total		120	
Paper II	4	Spatial Ability and Visualization Skills	20	90 mins.
	5	Observation & Problem Solving	20	
	6	General Awareness & Design Sensibility	20	
	Total		60	

Paper I: NPAT 2018 - Common

Section 1: Quantitative and Numerical Ability	
Construct	Sub Construct
Number System	Fractions, Surds and Decimals, Number Series
Arithmetic	Percentages, Profit & Loss, Discount, Compound Interest & Annuities, Ratio & Proportions, Time, Work & Distance, 2 D & 3D Figures- Areas & Volumes
Algebra	Basic Algebraic Identities, Equations - Linear & Quadratic sequence and Series (AP, GP)
Sets and Functions	Sets, Operation on Sets and their Applications, using Venn Diagrams, functions
Elementary Statistics & Probability	Mean, Mode, and Median, Measures of Dispersion
Trigonometry	Trigonometric Ratios, identities, Height and Distances

Section 2: Reasoning & General Intelligence	
Construct	Sub Construct
Critical Thinking	Decision Making (Take into cognizance various rules / conditions and take decisions based upon those rules / conditions) Problem Solving (To analyse the given information and condense all the information in a suitable form and answer the questions asked)
Verbal-logical reasoning	Derive conclusions from logical premises or assess the validity of arguments based on statement of facts
Data sufficiency	Judge if the information given is sufficient to answer the question or some additional information is required
Numerical Reasoning	Venn Diagram (Identify the class-sub class relationship among given group of items and illustrate it diagrammatically) Mathematical Equalities
Data Interpretation	Be able to use the information given in graphs and charts to answer questions
Spatial Reasoning	Figure Analogy (Choosing the figure from the alternatives that match with relationship specified by a given figural pair) Figure Matching / Classification (Notice the common quality in figures to be able to match figures or find the odd one out) Figure Series (To discover a pattern in the formation of figures in a sequence to be able to complete the series / identify the missing figures)

Section 3 : Proficiency in English Language	
Construct	Sub Construct
Error Recognition	Recognising grammatical structure and usage.
Applied Grammar	Using prepositions, determiners, connectives, tenses appropriately.
Vocabulary	Grasping the meaning of underlined words in sentences
Contextual Usage	Using appropriate words in the given context
Sequencing of Ideas	Putting ideas into logical sequence by putting jumbled sentences in the correct order
Reading Comprehension (3 in Passages of 400-500 words with 5 Questions per Passage)	Locating Information, grasping ideas, identifying relationships, interpreting ideas, moods, characteristics of characters, tone of passage, inferring , getting the central theme, evaluating

Paper II: NPAT 2018 - Design

Section 1: Spatial ability and Visualization		# of Questions: 20 Marks: 20
Construct	Sub Construct	No. of Questions
Principle of perception and visual design	Gestalt Principles of Perception - Proximity, Similarity, Continuation and Closure	1
	Huxley-Lester Model: Sight and thought perception	1
	Cognitive Perception involves a myriad of mental processes: interpretation, memory, comparison, salience, association, inventory, analysis and recognition	1
	Principles of Design: Balance, Proportion, Rhythm, Contrast, Pattern, Movement, Emphasis and Unity	2
	Semiotics (Science of signs and symbols): Iconic, Symbolic, Indexical	1
	Syntax, Semantics and Pragmatics of Graphics Design	1
Spatial relationships assessment	Interpretation of Space- Light and Scale (Spatial Properties)	2
	Constructivism—visual blueprinting (relating a pattern of shapes or visually arranging series of planes together)	2
	Orthographic representations	1
	Isometric representations	1
	Perspectives	1
Knowledge of practical and everyday mechanical and scientific concepts	Knowledge of form and material, usability, and emotional impact (day-to-day objects)	2
	Basic Mechanics	2
	Concept of Patterns in data	2

Section 2: Observation and Problem Solving		# of Questions: 20 Marks: 20
Construct	Sub Construct	No. of Questions
Ability to detect concealed properties in ordinary things, people, situations, and events, and thinking critically about them.	Ability to detect complexity/problems related to ease-of-use of modern/day-to-day devices	4
	Ability to understand spatial relations among 2D and 3D objects	2
Applying attention to certain details, analysing, reasoning, classifying, inferring and predicting.	Creative Problem Solving Techniques (Preparation, Incubation, Illumination, and Verification)	4
	Bottom to top and top to down approaches	2
Ability to discern subtle differences in visual properties and aesthetic outcomes.	Knowledge of spatial composition, lighting, Golden Ratio, Rule of Thirds, Balance, Color preference (Hue, Saturation, lightness)	3
Using these to solve problems	Use of fonts as element for communication or merely font awareness	2
	Use of design elements, design and perception principles, spatial properties, cultural preferences and structured design process	3

Section 3: General Awareness and Design		# of Questions: 20 Marks: 20
Construct	Sub Construct	No. of Questions
General awareness of environmental factors such as climate, population, water, vegetation, pollution, weather, natural resources etc., and their implications on the design of products, images, infrastructure and environment.	Design for Environment to achieve sustainability- Green Design	3
	Process changes and Product changes(focus on intangible products)	3
Awareness of social and cultural connection with design, history of the designed artefact, and socially responsible and environmentally sustainable design responses.	Designing for social and cultural sustainability- Inclusive Design	4
	Principles of Inclusive design: Responsive, Flexible, Convenient, Accommodating, Welcoming and Realistic	3
	Visual culture-> Culture expressed in visual images.	3
	Isometric representations	2
History of art, sculpture and literature	Art Movements/Periods- Basic Info	2