

NSAT – 2023 Syllabus

(National Safety Aptitude Test - 2023)

Syllabus for NSAT General

SL.	Subject Area	Marks	Elements
I) General Aptitude (20 questions)			
	General Aptitude	20	<ul style="list-style-type: none"> • English Language • Logical reasoning • Leadership Skill • IT proficiency
II) Occupational safety & Health (80 questions)			
1	Industrial Safety Management	13	<ul style="list-style-type: none"> • Safety Management • Role of Management in Industrial Safety • Organising for Safety • Directing Safety • Communication • Safety - Education and Training • Employee Participation in Safety • Behavior Based Safety (BBS) • Management Information System (MIS) • Accident Prevention • Disaster Management
2	Safety in Engineering Industry	13	<ul style="list-style-type: none"> • Machine Operation and Guarding • Safety in the use of Machines • Safety in the use of Hand Tools and Power Tools • Material Handling and Storage • Plant Layout Design and Housekeeping • Electrical Hazards at Workplace • Safety in Engineering Industries • Hazards at Workplace • Safety in Textile Industry • Safety in Agro-Industry / Sugar Industry • Safety in Docks Operations • Destructive Testing, Non Destructive Testing and Heat Treatment • Safety in IT and Electronic Industry and Service Sector
3	Safety in Construction Industry	13	<ul style="list-style-type: none"> • Hazards in Construction Sector and their preventive measures • Safety in the use of construction machinery • Working below ground level • Working at height

			<ul style="list-style-type: none"> • General Safety Measures
			<ul style="list-style-type: none"> • Special Works
			<ul style="list-style-type: none"> • Special precautions for works of engineering construction
			<ul style="list-style-type: none"> • Safety in Demolition Operations
			<ul style="list-style-type: none"> • Transportation System
4	Chemical and Process Safety Management	13	<ul style="list-style-type: none"> • Process Safety Management
			<ul style="list-style-type: none"> • Major Industrial Disasters
			<ul style="list-style-type: none"> • Enhancing safety in chemical industry
			<ul style="list-style-type: none"> • Unit operations and process hazards
			<ul style="list-style-type: none"> • Safe Handling of chemicals
			<ul style="list-style-type: none"> • Safety in plant operation and maintenance
			<ul style="list-style-type: none"> • Fire and explosion
			<ul style="list-style-type: none"> • Pressure vessels
			<ul style="list-style-type: none"> • Chemical Process Plant
			<ul style="list-style-type: none"> • Chemical Reaction Hazards
5	Quality Control in OSH	9	<ul style="list-style-type: none"> • Safety Appraisal & Control Techniques
			<ul style="list-style-type: none"> • Permit to work Systems
			<ul style="list-style-type: none"> • Accident / incident / near-miss / dangerous occurrence reporting, investigation
			<ul style="list-style-type: none"> • Measurement and evaluation of safety performance
			<ul style="list-style-type: none"> • Safety performance indicators
			<ul style="list-style-type: none"> • Classification of industrial accidents
			<ul style="list-style-type: none"> • Hazard identification, Risk assessment and control
			<ul style="list-style-type: none"> • Major Accident Hazards (MAH) Control System
			<ul style="list-style-type: none"> • Emergency Preparedness and response plans
			<ul style="list-style-type: none"> • Occupational Health and Safety Audits
			<ul style="list-style-type: none"> • Accident Analysis
6	Industrial Hygiene and Occupational Health	7	<ul style="list-style-type: none"> • Industrial Hygiene
			<ul style="list-style-type: none"> • Personal Protective Equipment
			<ul style="list-style-type: none"> • Ventilation and Heat Stress
			<ul style="list-style-type: none"> • Industrial Lighting & Illumination
			<ul style="list-style-type: none"> • Noise and Vibration
			<ul style="list-style-type: none"> • Occupational Health
			<ul style="list-style-type: none"> • Occupational Health Hazards & Occupational Diseases
			<ul style="list-style-type: none"> • First Aid
			<ul style="list-style-type: none"> • Introduction to Ergonomics:
			<ul style="list-style-type: none"> • Ergonomic Design of Work Station
			<ul style="list-style-type: none"> • Physiology at Work
7	OSH Legislations and Standards	12	<ul style="list-style-type: none"> • Factories Act and Rules
			<ul style="list-style-type: none"> • BOCW Act and Rules
			<ul style="list-style-type: none"> • Dock Workers Act & Regulations
			<ul style="list-style-type: none"> • Boilers Act

			<ul style="list-style-type: none"> • Petroleum Act & Rules
			<ul style="list-style-type: none"> • Explosives Act & Rules
			<ul style="list-style-type: none"> • Insecticides Act & Rules
			<ul style="list-style-type: none"> • Electricity Act and CEA Regulations
			<ul style="list-style-type: none"> • CMV Rules
			<ul style="list-style-type: none"> • Employee Compensation Act & Rules • Contract Labour Act and Rules
			<ul style="list-style-type: none"> • PLI Act & Rules
			<ul style="list-style-type: none"> • ILO Conventions & Recommendations
			<ul style="list-style-type: none"> • Indian Standards including NBC 2016
			<ul style="list-style-type: none"> • ISO Standards
			<ul style="list-style-type: none"> • OISD Standards
III) Environment (20 questions)			
	Environment	20	<ul style="list-style-type: none"> • Legislations (EP Act & Rules, Air Act & Rules, Water Act & Rules, PLI Act, National Green Tribunal Act, Energy Conservation Act)
			<ul style="list-style-type: none"> • Environmental Management Systems
			<ul style="list-style-type: none"> • Environmental Monitoring
			<ul style="list-style-type: none"> • Waste Management
			<ul style="list-style-type: none"> • Global Warming
			<ul style="list-style-type: none"> • Energy Conservation
			<ul style="list-style-type: none"> • Sustainability and Reporting

Syllabus for NSAT Oil&Gas

SL.	Subject Area	Marks	Elements
I) General Aptitude (20 questions)			
	General Aptitude	20	<ul style="list-style-type: none"> • English Language • Logical reasoning • Leadership Skill • IT proficiency
II) Occupational safety & Health (80 questions)			
1	Industrial Safety Management	10	<ul style="list-style-type: none"> • Management • Role of Management in Industrial Safety • Organising for Safety • Directing Safety • Communication • Safety - Education and Training • Employee Participation in Safety • Behavior Based Safety (BBS) • Management Information System (MIS) • Accident Prevention • Disaster Management
2	Safety in Engineering Industry	8	<ul style="list-style-type: none"> • Machine Operation and Guarding • Safety in the use of Machines • Safety in the use of Hand Tools and Power Tools • Material Handling and Storage • Plant Layout Design and Housekeeping • Electrical Hazards at Workplace • Safety in Engineering Industries • Hazards at Workplace • Safety in Textile Industry • Safety in Agro-Industry / Sugar Industry • Safety in Docks Operations • Destructive Testing, Non Destructive Testing and Heat Treatment • Safety in IT and Electronic Industry and Service Sector
3	Chemical and Process Safety Management	8	<ul style="list-style-type: none"> • Process Safety Management • Major Industrial Disasters • Enhancing safety in chemical industry • Unit operations and process hazards • Safe Handling of chemicals • Safety in plant operation and maintenance • Fire and explosion • Pressure vessels • Chemical Process Plant • Chemical Reaction Hazards

4	Quality Control in OSH	10	<ul style="list-style-type: none"> • Safety Appraisal & Control Techniques
			<ul style="list-style-type: none"> • Permit to work Systems
			<ul style="list-style-type: none"> • Accident / incident / near-miss / dangerous occurrence reporting, investigation
			<ul style="list-style-type: none"> • Measurement and evaluation of safety performance
			<ul style="list-style-type: none"> • Safety performance indicators
			<ul style="list-style-type: none"> • Classification of industrial accidents
			<ul style="list-style-type: none"> • Hazard identification, Risk assessment and control
			<ul style="list-style-type: none"> • Major Accident Hazards (MAH) Control System
			<ul style="list-style-type: none"> • Emergency Preparedness and response plans
			<ul style="list-style-type: none"> • Occupational Health and Safety Audits
			<ul style="list-style-type: none"> • Accident Analysis
6	Industrial Hygiene and Occupational Health	6	<ul style="list-style-type: none"> • Industrial Hygiene
			<ul style="list-style-type: none"> • Personal Protective Equipment
			<ul style="list-style-type: none"> • Ventilation and Heat Stress
			<ul style="list-style-type: none"> • Industrial Lighting & Illumination
			<ul style="list-style-type: none"> • Noise and Vibration
			<ul style="list-style-type: none"> • Occupational Health
			<ul style="list-style-type: none"> • Occupational Health Hazards & Occupational Diseases
			<ul style="list-style-type: none"> • First Aid
			<ul style="list-style-type: none"> • Introduction to Ergonomics:
			<ul style="list-style-type: none"> • Ergonomic Design of Work Station
			<ul style="list-style-type: none"> • Physiology at Work
7	OSH Legislations and Standards	8	<ul style="list-style-type: none"> • Factories Act and Rules
			<ul style="list-style-type: none"> • BOCW Act and Rules
			<ul style="list-style-type: none"> • Dock Workers Act & Regulations
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			<ul style="list-style-type: none"> • ILO Conventions & Recommendations
			<ul style="list-style-type: none"> • Indian Standards including NBC 2016
			<ul style="list-style-type: none"> • ISO Standards
8	Safety in Oil & Gas	30	<ul style="list-style-type: none"> • Petroleum Act and Petroleum Rules, Explosives Act and Rules, Gas Cylinders Rules, 2016.
			<ul style="list-style-type: none"> • Hazards in Oil and Gas industry - their prevention & control measures
			<ul style="list-style-type: none"> • Hazards of air and water in refinery operations
			<ul style="list-style-type: none"> • Safety in sampling
			<ul style="list-style-type: none"> • Safe startup and safe shutdown
			<ul style="list-style-type: none"> • Safe handing over of equipment for maintenance

			<ul style="list-style-type: none"> • H2S safety
			<ul style="list-style-type: none"> • Safe storage and handling of crude and petroleum products
			<ul style="list-style-type: none"> • Safety in operation and maintenance of LPG plants
			<ul style="list-style-type: none"> • Safety in transportation of petroleum products
			<ul style="list-style-type: none"> • Firefighting equipment and systems in O&G industry
			<ul style="list-style-type: none"> • Emergency response and disaster management plan (ERDMP)
			<ul style="list-style-type: none"> • OISD Standards, Guidelines and Recommended practices.
III) Environment (20 questions)			
	Environment	20	<ul style="list-style-type: none"> • Legislations (EP Act & Rules, Air Act & Rules, Water Act & Rules, PLI Act, National Green Tribunal Act, Energy Conservation Act)
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Syllabus for NSAT Construction

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