

NSAT – 2024 Syllabus

(National Safety Aptitude Test - 2024)

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

			· Petroleum Act & Rules
			· Explosives Act & Rules
			· Insecticides Act & Rules
			· Electricity Act and CEA Regulations
			· CMV Rules
			· Employee Compensation Act & Rules · Contract Labour Act and Rules
			· PLI Act & Rules
			· ILO Conventions & Recommendations
			· Indian Standards including NBC 2016
			· ISO Standards
			· OISD Standards
III) Environment (20 questions)			
	Environment	20	· Legislations (EP Act & Rules, Air Act & Rules, Water Act & Rules, PLI Act, National Green Tribunal Act, Energy Conservation Act)
			· Environmental Management Systems
			· Environmental Monitoring
			· Waste Management
			· Global Warming
			· Energy Conservation
			· 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 ✓ Permit to work Systems ✓ Accident / incident / near-miss / dangerous occurrence reporting, investigation ✓ Measurement and evaluation of safety performance ✓ Safety performance indicators ✓ Classification of industrial accidents ✓ Hazard identification, Risk assessment and control ✓ Major Accident Hazards (MAH) Control System ✓ Emergency Preparedness and response plans ✓ Occupational Health and Safety Audits ✓ Accident Analysis
6	Industrial Hygiene and Occupational Health	6	<ul style="list-style-type: none"> ✓ Industrial Hygiene ✓ Personal Protective Equipment ✓ Ventilation and Heat Stress ✓ Industrial Lighting & Illumination ✓ Noise and Vibration ✓ Occupational Health ✓ Occupational Health Hazards & Occupational Diseases ✓ First Aid ✓ Introduction to Ergonomics: ✓ Ergonomic Design of Work Station ✓ Physiology at Work
7	OSH Legislations and Standards	8	<ul style="list-style-type: none"> ✓ Factories Act and Rules ✓ BOCW Act and Rules ✓ Dock Workers Act & Regulations ✓ Boilers Act ✓ Insecticides Act & Rules ✓ Electricity Act and CEA Regulations ✓ CMV Rules ✓ Employee Compensation Act & Rules ✓ Contract Labour Act and Rules ✓ PLI Act & Rules ✓ ILO Conventions & Recommendations ✓ Indian Standards including NBC 2016 ✓ 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. ✓ Hazards in Oil and Gas industry - their prevention & control measures ✓ Hazards of air and water in refinery operations ✓ Safety in sampling ✓ Safe startup and safe shutdown ✓ 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, PII 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 Construction

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