

Senior Professional and Technical Examinations for Engineers—Exam Subjects for Candidates Granted a Partial Exemption (Table A)

No.	Exam Category	Exam Subjects
1.	Civil Engineer Exam	<ol style="list-style-type: none"> 1. Structural analysis (including mechanics of material and theory of structure) 2. Structural design (including design of reinforced concrete and steel structural design) 3. Geotechnics (including soil mechanics, foundation engineering and engineering geology) 4. Engineering survey (including plane survey and construction survey) 5. Construction method (including civil engineering, architecture construction method and engineering material)
2.	Hydraulic Engineer Exam	<ol style="list-style-type: none"> 1. Fluid mechanics 2. Hydrology 3. Water Resources Engineering and planning 4. Geotechnics (including soil mechanics, foundation engineering and engineering geology) 5. Channel hydraulics
3.	Structural Engineer Exam	<ol style="list-style-type: none"> 1. Theory of structure 2. Design of reinforced concrete and design of prestressed concrete 3. Steel structural design 4. Soil mechanics and basic design 5. Structural dynamics analysis and aseismatic design
4.	Geotechnical Engineer Exam	<ol style="list-style-type: none"> 1. Soil mechanics (including soil dynamics) 2. Foundation engineering and design (including excavation engineering and related foundation structure design) 3. Engineering geology and site investigation 4. Hillside works (including soil and water conservation engineering) 5. Geotechnical engineering
5.	Survey Engineer Exam	<ol style="list-style-type: none"> 1. Geography information system 2. Least squares adjustment 3. Plane survey

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		<ol style="list-style-type: none"> 4. Cartography 5. Geodetic survey
6.	Environmental Engineer Exam	<ol style="list-style-type: none"> 1. Environmental chemistry and environmental microbiology 2. Water supply engineering and sewage works 3. Waste engineering 4. Air pollution and noise control engineering 5. Environmental planning and management
7.	Urban Planning Engineer Exam	<ol style="list-style-type: none"> 1. Land use and public facility projects 2. Regulations on urban and district plans 3. Project analysis approach 4. Urban traffic plan 5. Environmental planning and design
8.	Mechanical Engineer Exam	<ol style="list-style-type: none"> 1. Thermodynamics and heat transfer (including heat engine) 2. Fluid mechanics and fluid machinery 3. Mechanism and machine design 4. Engineering mechanics (including statics, dynamics and mechanics of material) 5. Machine building
9.	Refrigeration And Air-Conditioning Engineer Exam	<ol style="list-style-type: none"> 1. Refrigerating engineering and design 2. Air conditioning engineering and design 3. Thermodynamics and heat transfer 4. Automatic control for refrigeration and air-conditioning 5. Electrical engineering (including electric machinery)
10.	Naval Architecture Engineer Exam	<ol style="list-style-type: none"> 1. Shipbuilding design (including shipbuilding principles) 2. Marine engineering 3. Electrical engineering (including electric machinery) 4. Fluid mechanics 5. Engineering mechanics (including statics, dynamics and mechanics of material)
11.	Electrical Engineer Exam	<ol style="list-style-type: none"> 1. Electronics (including power electronics) 2. Circuitry 3. Engineering mathematics (including linear algebra, differential equation, complex function and probability) 4. Electric machinery 5. Power system
12.	Electric Engineer Exam	<ol style="list-style-type: none"> 1. Electronics 2. Electromagnetism and electromagnetic wave

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		<ul style="list-style-type: none"> 3. Engineering mathematics (including linear algebra, differential equation, vector analysis, complex function and probability) 4. Electronic computer theory 5. Communication system
13.	Information Engineer Exam	<ul style="list-style-type: none"> 1. Mathematics for computer science 2. Data structure & database and data mining 3. Computer system 4. Systematic analysis and information security 5. Network principles and applications
14.	Aeronautical Engineer Exam	<ul style="list-style-type: none"> 1. Aerodynamics 2. Aircraft engine 3. Avionics system (including flight instruments) 4. Introduction to aircraft structures 5. Flight mechanics (including automatic control and airplane performance)
15.	Chemical Engineer Exam	<ul style="list-style-type: none"> 1. Transport phenomena and unit operation 2. Biochemical thermodynamics 3. Chemical reaction engineering (a.k.a. Chemical engineering kinetics) 4. Industrial chemistry 5. Process control
16.	Industrial Engineer Exam	<ul style="list-style-type: none"> 1. Operation research 2. Engineering statistics and quality management 3. Production management 4. Facility planning and automated manufacturing system 5. Human factors and ergonomics
17.	Industrial Safety Engineer Exam	<ul style="list-style-type: none"> 1. Regulations on labor safety and health 2. Industrial safety engineering 3. Industrial safety management (including applied statistics) 4. Introduction to industrial hygiene 5. Human factors and ergonomics
18.	Occupational Hygienist Exam	<ul style="list-style-type: none"> 1. Hazard identification and introduction to occupational diseases 2. Occupational health and health management practice 3. Workplace environmental control engineering 4. Workplace monitoring

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		5. Exposure and risk assessment
19.	Textile Engineer Exam	<ol style="list-style-type: none"> 1. Textile goods inspections 2. Study of textile materials (including physical and chemical properties of textile fiber and synthetic fiber production) 3. Textile engineering 4. Weaving engineering (including weaving, knitting, and felt) 5. Dyeing process (including scouring/bleaching, dyeing, and printing)
20.	Food Technologist Exam	<ol style="list-style-type: none"> 1. Food analysis and inspections 2. Food microbiology 3. Food processing 4. Food sanitation/safety and regulations 5. Food factory management
21.	Metallurgical Engineer Exam	<ol style="list-style-type: none"> 1. Metallurgy and thermodynamics 2. Material science 3. Ferrous metallurgy 4. Physical metallurgy 5. Metalworking (including casting, forging, soldering, and heat treatment)
22.	Agronomist Exam	<ol style="list-style-type: none"> 1. Soil science 2. Crop science 3. Crop physiology 4. Crop breeding 5. Experimental design
23.	Horticultural Technologist Exam	<ol style="list-style-type: none"> 1. Pomology 2. Olericulture 3. Study of flowers 4. Landscape gardening 5. Postharvest handling of horticultural products (including horticultural crops processing)
24.	Forestry Technologist Exam	<ol style="list-style-type: none"> 1. Silviculture (including forest protection) 2. Forest regulation (including inductive statistics) 3. Forest ecology (including forest resources and conservation) 4. Dendrology 5. Forest policy (including forestry regulations)
25.	Livestock Technologist	<ol style="list-style-type: none"> 1. Livestock anatomy and physiology 2. Livestock breeding

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	Exam	<ol style="list-style-type: none"> 3. Livestock nutrition 4. Livestock studies (including husbandry, cow husbandry, poultry husbandry) 5. Utilization of livestock products (including meat processing and dairy product processing)
26.	Fishing Technologist Exam	<ol style="list-style-type: none"> 1. Introduction to fisheries 2. Fishing methodology 3. Study on fishing gear (including fishery instruments) 4. Marine fishery resources 5. Fishing ground study
27.	Aquacultural Technologist Exam	<ol style="list-style-type: none"> 1. Introduction to fisheries 2. Aquatic life physiology 3. Fish diseases 4. Aquaculture (including aquacultural engineering) 5. Aquaculture feeds and baits
28.	Soil And Water Conservation Engineer Exam	<ol style="list-style-type: none"> 1. Soil physics and erosion 2. Hill slope hydrology 3. Soil and water conservation engineering 4. Vegetation engineering 5. Soil and water conservation planning (including regulations on water and soil conservation)
29.	Mining Engineer Exam	<ol style="list-style-type: none"> 1. Mine ground design and environmental maintenance 2. Surveying 3. Geology and ore deposit 4. Mining engineering (including mine safety) 5. Petroleum exploration
30.	Applied Geological Engineer Exam	<ol style="list-style-type: none"> 1. General geology (including environmental geology) 2. Geotechnics (including soil mechanics and rock mechanics) 3. Engineering geology (including hydrogeology) 4. Stratigraphy and structural geology 5. Geological survey (including geophysical exploration)
31.	Mining Safety Engineer Exam	<ol style="list-style-type: none"> 1. Regulations on mine safety and sanitation 2. Mine accidents and responses 3. Mining engineering 4. Mine ventilation and drainage 5. Explosives and blasting
32.	Transportation	<ol style="list-style-type: none"> 1. Traffic engineering and design

No.	Exam Category	Exam Subjects
	Engineer Exam	<ol style="list-style-type: none">2. Transportation engineering3. Transportation planning4. Traffic safety5. Traffic control
Note		All subjects are tested in essay format.