

**REG REVIEW ASSESSMENT OF ASBOG® FG/PG TEST BLUEPRINT FROM ASBOG®
PROFESSIONAL GEOLOGISTS CANDIDATE HANDBOOK - Revised April 2011**

# Questions					REG REVIEW, Inc.		
FG %/ FG #	PG %/ PG #	Total %	FG	PG		Chapter in Study Manual	Covered in Course
			X	X	Knowledge Base common to all topics: <i>Project management, organization and economics (PG); Professionalism and ethics (FG/PG)</i>		√
20%/ #28	21%/ #23.1	20.4			A. General and Field Geology: <i>Subsurface exploration, techniques, and interpretations; Geologic and geophysical tools, application, and interpretation; Surface mapping and map applications; Cross-section construction; Photogrammetry, terrain measurement, GPS, and GIS; Image analysis and interpretation; Scale and scale analysis; Measurement theory: accuracy and precision; Documentation and record keeping; Modeling concepts.</i>		
			X	X	Plan and conduct geological operations including human health, safety, the environment, regulations, and QA/QC	7,10	√
			X	X	Collect, compile and interpret historic information to plan geological investigations		√
			X	X	Interpret and analyze available geological and geophysical data, maps, sections, and reports	7, 9,10	√
			X	X	Determine scales, distances, and elevations from imagery, surveys, maps and GIS	3	√
			X	X	Prepare, analyze, and interpret logs, cross-sections, maps and other graphics derived from field investigations and GIS applications	2,3,7	√
11%/ #15.4	5%/ # 5.5	8.4			B. Mineralogy, Petrology, & Geochemistry: <i>Rock and mineral identification; Crystal symmetry, systems, and forms; Igneous rocks and processes; Sedimentary rocks and processes; Metamorphic rocks and processes; Geochemical reactions and diagenesis.</i>		
				X	Plan and conduct mineralogic, petrologic and geochemical investigations, including the use of modeling and geophysics	6	√
			X		Identify minerals and rocks and their characteristics	5	√
			X		Identify and interpret rock and mineral sequences, associations and genesis	5,6	√
			X	X	Evaluate geochemical and isotopic data, and construct geochemical models related to rocks and minerals		√
			X		Determine type, degree, and effects of rock and mineral alteration	5	√
12%/ #16.8	5%/ #5.5	8.9			C. Sedimentology, Stratigraphy, & Paleontology: <i>Geologic time; Geochronology; Fossil record and evolution; Stratigraphic principles; Geochemical reactions; Weathering and soil formation; Erosion; Sediment transport; Depositional environments; Facies analysis; Basin analysis; Sedimentary structures; Diagenesis.</i>		
				X	Plan and conduct sedimentologic, stratigraphic, or paleontologic investigations, including the use of modeling and geophysics		√
			X		Select and apply appropriate stratigraphic nomenclature and establish correlations	3	√
			X	X	Identify and interpret sedimentary processes and structures, depositional environments, and sedimentary provenance	3,4	√
			X		Identify and interpret sediment or rock sequences, positions, and ages	3,5	√
			X		Identify and interpret fossils and fossil assemblages for age or paleoenvironmental interpretations		√
13%/ #18.2	8%/ #8.8	10.8			D. Geomorphology, Surficial Processes, & Quaternary Geology: <i>Geomorphic processes; Sea level change; Landform analysis; Weathering; Groundwater and surface water; Low temperature geochemistry; Human-land interaction; Soil development and classification.</i>		
				X	Plan and conduct geomorphic investigations, including the use of modeling and geophysics	4,10	√
			X		Identify, classify and interpret landforms, surficial materials, and processes	4,12	√
			X		Determine absolute or relative age relationships of landforms, sediments, and soils	3,4	√
			X	X	Evaluate geomorphic processes and development of landforms, sediments, and soils, including watershed functions	4	√
			X	X	Interpret geomorphic conditions and processes based on remote sensing and GIS		√

# Questions					REG REVIEW, Inc.		
FG %/ FG #	PG %/ PG #	Total %	FG	PG	Chapter in Study Manual	Covered in Course	
11%/ #15.4	9%/ #9.9	10.1			E. Structure, Tectonics, & Seismology: <i>Fractures, faulting, and folding; Rock fabric; Mechanical properties of rocks; Structural interpretation and analysis; Plate tectonics; Tectonic regimes; Volcanic processes; Structural and seismic history; Earthquake processes and hazards.</i>		
				X	Plan and conduct structural, tectonic, or seismologic investigations, including the use of modeling and geophysics	2,10,12	√
			X		Identify and define structural features and relations, including constructing and interpreting structural projections and statistical analyses	2	√
			X	X	Interpret deformational history through structural and tectonic analyses	2,3	√
			X	X	Develop and apply tectonic models to identify geologic processes and history		√
			X	X	Evaluate earthquake mechanisms, paleoseismic history, and hazards	12	√
11%/ #15.4	19%/ #20.9	14.5			F. Hydrogeology: <i>Landform analysis; Weathering; Groundwater and surface water; Low temperature aqueous geochemistry; Contaminant transport and geochemistry; Hydraulic properties of fluids and earth materials; Human-land interaction; Site investigation methods, tools, and applications; Well drilling, design, and construction; Soil and water remediation techniques; Water resource protection.</i>		
				X	Plan and conduct hydrogeological, geochemical, and environmental investigations, including the use of modeling, geophysics, and isotopic and tracer studies	8,9,10	√
			X		Define and characterize hydraulic properties of saturated and vadose zone flow systems	8	√
			X		Design groundwater monitoring, observation, extraction, production, or injection wells		√
			X	X	Evaluate water resources, assess aquifer yield, and determine sustainability		√
			X	X	Characterize water quality and assess chemical fate and transport	9	√
				X	Manage, develop, protect, or remediate, surface water or groundwater resources		√
11%/ #15.4	17%/ #18.7	13.6			G. Engineering Geology: <i>Landform analysis; Soil and rock weathering; Groundwater and surface water; Low temperature geochemistry; Human-land interaction; Soil and rock mechanics; Soil and rock classification and engineering properties; Hazardous geologic processes; Hazard and risk analyses; Cost/benefit analyses; Site investigation methods, tools, and applications; Land restoration and hazard mitigation; Mine closure.</i>		
				X	Plan and conduct environmental and engineering geological investigations, including the use of modeling and geophysics	10, 11, 13	√
				X	Identify and evaluate engineering and physical properties of earth materials	4,7	√
				X	Provide recommendations for engineering design, land use decisions, and watershed management	11,13	√
			X	X	Identify, map, and evaluate geologic, geomorphic, and seismic hazards	3,4,12	√
			X	X	Interpret land use and landforms using imagery, maps, records, GIS, and geological site characteristics		√
				X	Design programs for hazard mitigation, and land and watershed restoration	12,13	√
11%/ #15.4	16%/ #17.6	13.2			H. Economic Geology & Energy Resources: <i>Hazard and risk analyses; Exploration and development techniques; Petroleum systems; Mineralization processes; Characteristics of hydrocarbon traps; Characteristics of mineral deposits; Mineral economics; Exploration risk; Resource/reserve assessment; Safety considerations; Land restoration and hazard mitigation; Mine and well decommission.</i>		
				X	Plan and conduct mineral or energy resource exploration, evaluation, and environmental programs, including the use of modeling, geophysics, and geochemistry	6,10	√
			X	X	Compile, assess, and evaluate the data necessary to explore for mineral and energy resources	5,6	√
			X	X	Estimate the distribution of resources based on surface and subsurface data including imagery and GIS applications	3,7	√
			X	X	Interpret data for economic evaluations, resource assessments, and probability of success		√
			X	X	Determine quantity and quality of resources and reserves from laboratory, surface, and subsurface data	12	√
				X	Perform geological evaluations for design, abandonment, closure, and reclamation and restoration of energy development or mineral extraction operations		√
100%/ #140	100%/ #110	99.9%					