

EXAM FORMAT AND AIDS PERMITTED FOR OCTOBER - DECEMBER 2021 NATIONAL TECHNICAL SESSION

List of Aids for October-December 2021 National Technical Sitting

Name of Subject Basic Studies	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
04-BS-1, Mathematics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae
04-BS-2, Probability and Statistics (2hrs)	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. Note; statistical tables of the normal, t, chi-square and F distributions are provided
04-BS-3, Statics and Dynamics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. The aid sheet must be submitted with the written exam paper.
04-BS-4, Electric Circuits and Power	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
04-BS-5, Advanced Mathematics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
04-BS-6, Mechanics of Materials	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. Note, example problems and solutions to problems are <b>NOT</b> allowed. <b><u>THE AID SHEET MUST BE SUBMITTED WITH THE WRITTEN EXAM.</u></b>
04-BS-7, Mechanics of Fluids	2	CLOSED	NONE
04-BS-8, Digital Logic Circuits	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
04-BS-9, Basic Electromagnetics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
04-BS-10, Thermodynamics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
04-BS-11, Properties of Materials	2	CLOSED	NONE
04-BS-12, Organic Chemistry	2	CLOSED	NONE
04-BS-13, Biology	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
04-BS-14, Geology	2	CLOSED	NONE
04-BS-15, Engineering Graphics and Design Process	1	CLOSED	NONE
04-BS-16, Discrete Mathematics	2	CLOSED	NONE

**Format 1, No Calculators Permitted;**

**Format 2, One of two calculators is permitted - any Casio or Sharp approved model;**

**Format 3, Any non-communicating calculator is permitted.**

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<b>Name of Subject Complementary Studies</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
11-CS-1, Engineering Economics	3	OPEN	Candidates should bring with them compound interest factors tables
11-CS-2, Engineering in Society- Health and Safety	1	CLOSED	NONE
11-CS-3, Sustainability, Engineering and the Environment	2	CLOSED	NONE
11-CS-4, Engineering Management	1	CLOSED	NONE

<b>Name of Subject Biomedical/Biochemical</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
04-Bio-A4, Biomechanics	3	OPEN	NONE
04-Bio-A8, Biophysical	3	OPEN	NONE
04-Bio-B8, Rehabilitation Engineering	3	OPEN	NONE

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Name of Subject Building	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
07-Bld-A1, Elementary Structural Analysis	2	CLOSED	NONE
07-Bld-A2, Elementary Structural Design	2	CLOSED	Handbooks and textbooks are permitted. No notes or sheets are allowed.
07-Bld-A3, Construction Engineering	2	CLOSED	NONE
07-Bld-B6, Building Energy Conversion Technologies	2	CLOSED	NONE

Name of Subject Chemical	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
16-Chem-A1, Process Balances and Chemical Thermodynamics	3	OPEN	This is an open-book exam. One textbook of your choice with notations listed on the margins etc. are permitted for each section/part, but no loose notes are permitted into the exam.
16-Chem-A2, Unit Operations and Separation Processes	3	OPEN	Candidates can bring <b>ONE</b> textbook of their choice. The textbook can have notations listed on the margins but no loose notes are permitted.
16-Chem-A3, Heat and Mass Transfer	3	OPEN	One textbook of choice with notations listed on the margins but no loose notes are permitted.
16-Chem-A4, Chemical Reactor Engineering	3	OPEN	Candidates can bring <b>ONE</b> textbook of their choice. The textbook can have notations listed on the margins but no loose notes/or solved problems are permitted. Candidates should have unit conversion tables and/or mathematical tables such as a CRC handbook.
16-Chem-A5, Chemical Plant Design and Economics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
16-Chem-A6, Process Dynamics & Control	3	OPEN	NONE
16-Chem-B1, Transport Phenomena	3	OPEN	Candidates can bring ONE textbook of choice with notations listed on the margins, but no loose notes are permitted.

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Name of Subject Civil	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
16-Civ-A1, Elementary Structural Analysis	2	CLOSED	NONE
16-Civ-A2, Elementary Structural Design	2	CLOSED	Handbooks and textbooks are permitted. <b><u>NO notes or loose sheets are allowed.</u></b> Candidates <b>MUST</b> write the name and model number of their calculator on the inside front cover of the exam book. Note: The solutions for Standards of Steel, Concrete & Timber must come from the latest manual editions.
16-Civ-A3, Municipal and Environmental Engineering	3	OPEN	NONE
16-Civ-A3, Elementary Environmental Engineering (National Only)	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
16-Civ-A4, Geotechnical Materials and Analysis	2	CLOSE	NONE
16-Civ-A5, Hydraulic Engineering	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
16-Civ-A6, Highway Design, Construction and Maintenance	2	CLOSED	NONE
16-Civ-B1, Advanced Structural Analysis	2	CLOSED	NONE
16-Civ-B2, Advanced Structural Design	2	CLOSED	Design handbooks and textbooks are permitted. <b><u>NO notes or loose sheets are allowed.</u></b> Candidates <b>MUST</b> write the name and model number of their calculator on the inside front cover of the exam book.
16-Civ-B3, Geotechnical Design	3	OPEN	It is to the candidate's advantage to bring the Canadian Foundation Manual.
16-Civ-B4, Engineering Hydrology	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
16-Civ-B5, Water Supply & Wastewater Treatment	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
16-Civ-B7, Transportation Planning and Engineering	2	CLOSED	No solved questions from a textbook or any other sources, i.e. the Internet, may be used in your responses. They must be written in your own words.
16-Civ-B8, Management of Construction	2	CLOSED	NONE
16-Civ-B9, The Finite Element Method	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
16-Civ-B10, Traffic Engineering	3	OPEN	NONE
16-Civ-B11, Structural Materials	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing <b>Formulas Only</b>

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Name of Subject Computer	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
17-Comp-A2, Digital Systems Design	2	CLOSED	NONE
17-Comp-B5, Computer Communications	2	CLOSED	NONE
17-Comp-B12, Computer Security	2	CLOSE	NONE

Name of Subject Electrical	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
16-Elec-A1, Circuits	2	CLOSED	NONE
16-Elec-A2, Systems and Control	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <b><u>The aid sheet must be signed and submitted with the written exam paper.</u></b>
16-Elec-A3, Signals and Communications	2	CLOSED	NONE
16-Elec-A4, Digital Systems and Computers	2	CLOSED	NONE
16-Elec-A5, Electronics	2	CLOSED	NONE
16-Elec-A6, Power Systems and Machines	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <b><u>No worked out solutions are allowed on this sheet.</u></b>
16-Elec-A7, Electromagnetics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <b><u>No worked out solutions are allowed on this sheet.</u></b>
16-Elec-B1, Digital Signal Processing	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing tables & formulas written both sides. No textbook excerpts or examples solved.
16-Elec-B2, Advanced Control Systems	2	OPEN	NONE
16-Elec-B3, Digital Communications Systems	2	CLOSED	NONE

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16-Elec-B4, Information Technology Networks	2	CLOSED	NONE
16-Elec-B5, Advanced Electronics	2	CLOSED	NONE
16-Elec-B6, Integrated Circuit Engineering	2	CLOSED	NONE
16-Elec-B7, Power Systems Engineering	3	OPEN	NONE
16-Elec-B8, Power Electronics and Drives	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <b><u>No worked out solutions are allowed on this sheet.</u></b>
16-Elec-B9, Electromagnetic Field, Transmission Lines, Antennas, and Radiation	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
16-Elec-B10, Electro-Optical Engineering	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.

Name of Subject Environmental	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
18-Env-A1, Principles of Environmental Engineering	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
18-Env-A2, Hydrology and Municipal Hydraulics Engineering	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
18-Env-A3, Geotechnical and Hydrogeological Engineering	3	OPEN	NONE
18-Env-A4, Water and Wastewater Engineering	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
18-Env-A5, Air Quality and Pollution Control Engineering			
18-Env-A6, Solid Waste Engineering & Management	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.

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18-Env-B1, Environmental Assessment and Management	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
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<b>Name of Subject Geological</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
18-Geol-A1, Mineralogy and Petrology	1	CLOSED	NONE
18-Geol-A2, Hydrogeology	3	OPEN	NONE
18-Geol-A4, Structural Geology	2	CLOSED	Protractor, drawing compass and ruler are permitted.
18-Geol-A5, Rock Mechanics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
18-Geol-A6, Soil Mechanics	2	CLOSED	A compass and ruler are required.
18-Geol-A7, Applied Geophysics	2	CLOSED	NONE
18 -Geol-B6-1, Petroleum Deposit	2	CLOSED	NONE

<b>Name of Subject Geomatics</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
18-Geom-A1, Surveying	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
18-Geom-A7, Geospatial Information Systems	2	CLOSED	NONE

<b>Name of Subject Industrial</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
17-Ind-A1, Operations Research	3	OPEN	Indicate calculator used.
17-Ind-A2, Analysis and Design of Work	2	CLOSED	NONE
17-Ind-A3, Facilities Planning	2	CLOSED	NONE
17-Ind-A4, Production Management	2	CLOSED	NONE

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17-Ind-A5, Quality Planning, Control, and Assurance	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
17-Ind-A6, Systems Simulation	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
17-Ind-B1, Applied Probability and Statistics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
17-Ind-B2, Manufacturing Processes	2	CLOSED	NONE
17-Ind-B5, Ergonomics	3	OPEN	NONE

<b>Name of Subject Marine</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
98-Mar-A5, Advanced Strength of Materials	2	OPEN	NONE
98-Mar-B5, Fluid Machinery	2	CLOSED	Drawing instruments (scale ruler, protractor and sharp pencil) are required for vector diagrams.

<b>Name of Subject Mechanical</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
16-Mec-A1, Applied Thermodynamics and Heat Transfer	3	OPEN	Candidates are expected to have copies of both a thermodynamics text AND a heat transfer text in order to make use of the information presented in the tables and graphs. Candidates may consult any textbook but no previous examination solution or solved problems. Candidates <b>MUST</b> write the name and model number of their calculator on the inside front cover of the exam book.
16-Mec-A2, Kinematics and Dynamics of Machines	2	OPEN	NONE
16-Mec-A3, System Analysis and Control	2	CLOSED	NONE
16-Mec-A4, Design and Manufacture of Machine Elements	3	OPEN	NONE
16-Mec-A5, Electrical and Electronics Engineering	2	CLOSED	NONE
16-Mec-A6, Advanced Fluid Mechanics (PEO Candidate only) Mec-B6 code for Nationals	2	OPEN	NONE
16-Mec-A7, Advanced Strength of Materials	2	OPEN	NONE
16-Mec-B1, Advanced Machine Design	3	OPEN	NONE

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16-Mec-B2, Environmental Control in Buildings	3	OPEN	Candidates are expected to have copies of both an environmental control book and steam tables. No notes or solved problems permitted.
16-Mec-B3, Energy Conversion and Power Generation	2	CLOSED	Drawing instruments (scale ruler)
16-Mec-B4, Integrated Manufacturing Systems	3	OPEN	NONE
16-Mec-B5, Product Design and Development	2	OPEN	NONE
16-Mec-B6, Fluid Machinery (PEO Candidate only) Mec-A6 code for Nationals	2	CLOSED	Drawing instruments (scale ruler, protractor and sharp pencil) are required for vector diagrams.
16-Mec-B7, Aero and Space Flight	2	OPEN	NONE
16-Mec-B8, Engineering Materials	2	OPEN	NONE
16-Mec-B9, Advanced Engineering Structures	2	OPEN	NONE
16-Mec-B10, Finite Element Analysis	3	OPEN	NONE
16-Mec-B12, Robot Mechanics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. No worked out solutions of examples and must be handed in with exam.

<b>Name of Subject Mechatronics</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
16-Mex-A1, System Analysis and Control	2	CLOSED	NONE
16-Mex-A2, Circuits and Electronics	2	CLOSED	NONE
16-Mex-A3, Digital Systems Computers	2	CLOSED	NONE

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16-Mex-A7, Instrumentation, Measurements, Sensors and Actuators	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. No worked out solutions of examples and must be handed in with exam.
16-Mex-B3, Advanced Control Systems	2	OPEN	NONE
16-Mex-B5, Robot Mechanics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. No worked out solutions of examples and must be handed in with exam.
16-Mex-B8, Product Design and Development	2	OPEN	NONE
16-Mex-B10, Power Systems and Machines	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <b><u>No worked out solutions are allowed on this sheet.</u></b>

<b>Name of Subject Manufacturing</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
08-Mfg-A1, Design & Manufacture of Machine Elements	3	OPEN	NONE
08-Mfg-A2, Manufacturing Processes	2	CLOSED	NONE
08-Mfg-A3, Production Management	2	CLOSED	NONE
08-Mfg-A4, Analysis and Design of Work	2	CLOSED	NONE
08-Mfg-A5, Facilities Planning	2	CLOSED	NONE
08-Mfg-A6, Quality Planning, Control and Assurance	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
08-Mfg-B3, System Simulation	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
08-Mfg-B4, Product Design and Development	2	OPEN	NONE

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08-Mfg-B6, Metrology	3	OPEN	NONE
08-Mfg-B8, Robot Mechanics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. No worked out solutions of examples and must be handed in with exam.
08-Mfg-B10, Tooling, Jigs and Fixture Design	3	OPEN	NONE
08-Mfg-B12, Ergonomics	3	OPEN	NONE

<b>Name of Subject Mining and Mineral Processing</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
18-MMP-B2, Rock Fragmentation	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides.

<b>Name of Subject Naval</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
16-Nav-A1, Fundamentals of Naval Architecture	3	OPEN	NONE
16-Nav-A2, Hydrodynamics of Ships(1): Resistance and Propulsion	2	CLOSED	NONE
16-Nav-B1, Applied Thermodynamics & Heat Transfer	3	OPEN	Candidates are expected to have copies of both a thermodynamics text AND a heat transfer text in order to make use of the information presented in the tables and graphs. Candidates may consult any textbook but no previous examination solution or solved problems. Candidates <b>MUST</b> write the name and model number of their calculator on the inside front cover of the exam book.

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Name of Subject Nuclear	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
08-Nuc-A6, Nuclear Power Plant Systems & Operations	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.

Name of Subject Engineering Physics	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
17-Phys-A6, Solid State Physics	2	CLOSED	NONE
17-Phys-B5, Systems and Control	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <b><u>The aid sheet must be signed and submitted with the written exam paper.</u></b>
17-Phys-B6, Applied Thermodynamics and Heat Transfer	3	OPEN	Candidates are expected to have copies of both a thermodynamics text AND a heat transfer text in order to make use of the information presented in the tables and graphs. Candidates may consult any textbook but no previous examination solution or solved problems. Candidates <b>MUST</b> write the name and model number of their calculator on the inside front cover of the exam book.

Name of Subject Software	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
19-Soft-A2, Computer Architecture and Operating Systems	3	OPEN	NONE
19-Soft-A6, Software Quality Assurance	3	OPEN	NONE
19-Soft-B4, Dependable Systems	1	CLOSE	NONE

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Name of Subject Structural	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
07-Str-A1, Elementary Structural Analysis	2	CLOSED	NONE
07-Str-A2, Elementary Structural Design	2	CLOSED	Handbooks and textbooks are permitted. <b><u>NO notes or loose sheets are allowed.</u></b> Candidates <b>MUST</b> write the name and model number of their calculator on the inside front cover of the exam book. Note: The solutions for Standards of Steel, Concrete & Timber must come from the latest manual editions.
07-Str-A3, Geotechnical Materials and Analysis	2	CLOSED	NONE
07-Str-A4, Advanced Structural Analysis	2	CLOSED	NONE
07-Str-A5, Advanced Structural Design	2	CLOSED	Design handbooks and textbooks are permitted. <b><u>NO notes or loose sheets are allowed.</u></b> Candidates <b>MUST</b> write the name and model number of their calculator on the inside front cover of the exam book.
07-Str-A6-1, The Finite Element Method	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
07-Str-A6-3, Earthquake Engineering	3	OPEN	NONE
07-Str-B1, Geotechnical Design	3	OPEN	It is to the candidate's advantage to bring the Canadian Foundation Manual.
07-Str-B2, Management of Construction	2	CLOSED	NONE
07-Str-B11, Hydraulic Engineering	2	CLOSED	Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.

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Name of Subject Transportation	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
07-Tra-A6, Geotechnical Materials and Analysis	2	CLOSED	NONE

Name of Subject Water Resources	Format 1,2, or 3	Closed or Open Book	Aids/Instructions to the Candidates
07-Wrse-A1, Water Quality and Management	3	OPEN	NONE
07-Wrse-A2, Engineering Hydrology	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
07-Wrse-A3, Soil Mechanics & Groundwater	3	OPEN	NONE
07-Wrse-A5, Water Resources Planning & Systems	2	CLOSED	NONE
07-Wrse-B3, Water Supply & Wastewater Treatment	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
07-WRSE-B4, Open Channel Hydraulics	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
07-Wrse-B11, Principles of Environmental Engineering	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.
07-Wrse-B12, Environmental Assessment and Management	2	CLOSED	Candidates are allowed to bring <b>ONE</b> aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae.

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**APEGA Set Exams – List of Aids**

<b>Name of Subject Geoscience</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
20-GFUND-01a- Elementary Calculus I	n/a	CLOSED	You may bring a non-programmable calculator. You may not bring any other reference materials.
20-GFUND-01b - Elementary Calculus II	n/a	CLOSED	You may bring a non-programmable calculator. You may not bring any other reference materials.
20-GFUND-02-a, General Physics I	n/a	OPEN	You may bring any type of calculator, textbook and reference materials.
20-GFUND-03a, General Chemistry I	n/a	CLOSED	You may bring a programmable calculator. Data sheets will be provided.
20-GLGY-07 Geochemistry	n/a	CLOSED	You can bring a non-programmable calculator. You may not bring any other reference materials.
20-GOPH-1A-1d, Chemistry	n/a	CLOSED	You may bring a programmable calculator. Data sheets will be provided.

<b>Name of Subject Preliminary Studies</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
20-Prelim-03, Physics	n/a	OPEN	You may bring any type of calculator, textbook and reference materials.
20- Management Concepts for Engineers Prelim-04, Chemistry	n/a	CLOSED	You may bring a programmable calculator. Data sheets will be provided.

**EXAM FORMAT AND AIDS PERMITTED FOR OCTOBER - DECEMBER 2021 NATIONAL TECHNICAL SESSION**

<b>Name of Subject Complementary Studies</b>	<b>Format 1,2, or 3</b>	<b>Closed or Open Book</b>	<b>Aids/Instructions to the Candidates</b>
98-CS-2, Engineering in Society - Health, Safety and the Environment	n/a	CLOSED	You may bring a non-programmable calculator. You may not bring any other reference materials.
98-CS-3, Management Concepts for Engineers	n/a	CLOSED	You may bring a non-programmable calculator. You may not bring any other reference materials.

**EGBC Set Exams – List of Aids**

**To be updated**