

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| Name of Subject Basic Studies | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|--------------------------------------------|------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 04-BS-1, Mathematics | 2 | CLOSED | Candidates are allowed to bring ONE 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 ONE 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 ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <u>THE AID SHEET MUST BE SUBMITTED WITH THE WRITTEN EXAM.</u> No external resources of any type are allowed to be accessed during the writing of this exam. |
| 04-BS-4, Electric Circuits and Power | 2 | CLOSED | Candidates are allowed to bring ONE 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 ONE 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 ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. Note, example problems and solutions to problems are NOT allowed. <u>THE AID SHEET MUST BE SUBMITTED WITH THE WRITTEN EXAM.</u> |
| 04-BS-7, Mechanics of Fluids | 2 | CLOSED | Print diagrams in advance of the exam: https://www.egbc.ca/getmedia/e80aa7e6-bf1d-4e39-8146-8d730bc05a9d/PEO-Technical-Examinations-Required-Charts.pdf.aspx |
| 04-BS-8, Digital Logic Circuits | 2 | CLOSED | Candidates are allowed to bring ONE 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 ONE 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 ONE 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 ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 04-BS-14, Geology | 2 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|---------------------------------------------------|---|--------|------|
| 04-BS-15, Engineering Graphics and Design Process | 1 | CLOSED | NONE |
| 04-BS-16, Discrete Mathematics | 2 | CLOSED | NONE |

| Name of Subject Complementary Studies | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|----------------------------------------------------------|------------------|------------------------|--------------------------------------------------------------------|
| 11-CS-1, Engineering Economics | 2 | 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 |

| Name of Subject Complementary Studies (APEGA CANDIDATES ONLY) | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|---------------------------------------------------------------------|------------------|------------------------|--------------------------------------------------------------------|
| 98-CS-1 (11-CS-1), Engineering Economics | 2 | OPEN | Candidates should bring with them compound interest factors tables |
| 98-CS-2, Engineering in Society- Health, Safety and the Environment | 2 | CLOSED | NONE |
| 98-CS-3, Management Concepts for Engineers | 2 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| Name of Subject Agricultural | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|--------------------------------------------------------------|------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 04-Agric-A1, Applied Plant, Animal or Human Physiology | 2 | OPEN | NONE |
| 04-Agric-A4, Fluid Flow | 2 | OPEN | NONE |
| 04-Agric-A5, Principles of Instrumentation | 2 | OPEN | NONE |
| 04-Agric-A7, Chemistry and Microbiology of Foods examination | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 04-Agric-B6, Irrigation, Drainage | 2 | OPEN | NONE |
| 04-Agric-B10, Biochemical Engineering | 2 | CLOSED | NONE |

| Name of Subject Biomedical/Biochemical | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|------------------------------------------------------------|------------------|------------------------|-------------------------------------|
| 04-Bio-A2, Process Dynamics and Control | 2 | OPEN | NONE |
| 04-Bio-A3, Cellular and Molecular Biology and Biochemistry | 2 | CLOSED | NONE |
| 04-Bio-A4, Biomechanics | 2 | OPEN | NONE |
| 04-Bio-A7, Fluid Mechanics | 2 | OPEN | NONE |
| 04-Bio-B4, Digital Image Processing | 1 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|
| 04-Bio-B11, Ergonomics | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
|------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|

| Name of Subject Building | Format 1 or 2 | 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-A4, Building Engineering Systems | 2 | CLOSED | NONE |
| 07-Bld-A5 Building Science | 2 | OPEN | NONE |
| 07-Bld-A6, Geotechnical Materials and Analysis | 2 | CLOSED | NONE |
| 07-Bld-A7 Building Envelope Design | 2 | CLOSED | NONE |
| 07-Bld-B1, Computer Programming | 2 | CLOSED | NONE |
| 07-Bld-B4, Modern Building Materials | 1 | CLOSED | NONE |
| 07-Bld-B5, Fire and Smoke Control in Buildings | 2 | CLOSED | NONE |
| 07-Bld-B6 Building Energy Conservation Technologies | 2 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|-------------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|
| 07-Bld-B7, Indoor Air Quality | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
|-------------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|

| Name of Subject Chemical | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|----------------------------------------------------------|------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16-Chem-A1, Process Balances and Chemical Thermodynamics | 2 | 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 | 2 | OPEN | Candidates can bring ONE 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 | 2 | OPEN | One textbook of choice with notations listed on the margins but no loose notes are permitted. |
| 16-Chem-A4, Chemical Reactor Engineering | 2 | OPEN | Candidates can bring ONE 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 ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 16-Chem-A6, Process Dynamics & Control | 2 | OPEN | NONE |
| 16-Chem-B1, Transport Phenomena | 2 | OPEN | One textbook of your choice with notations listed on the margins etc., but no loose notes are permitted into the exam. |
| 16-Chem-B2, Environmental Engineering | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 16-Chem-B4, Biochemical Engineering | 2 | CLOSED | NONE |
| 16-Chem-B5, Pulp and Paper Technology | 2 | OPEN | NONE |
| 16-Chem-B6, Petroleum Refining and Petrochemicals | 2 | OPEN | NONE |
| 16-Chem-B8, Polymer Engineering | 2 | OPEN | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|------------------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|
| 16-Chem-B10, Life Cycle Assessment | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
|------------------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|

| Name of Subject Civil | Format 1 or 2 | 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. <u>NO notes or loose sheets are allowed.</u> Candidates MUST 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 | 2 | OPEN | NONE |
| 16-Civ-A3, Elementary Environmental Engineering (National Only) | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 16-Civ-A4, Geotechnical Materials and Analysis | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 16-Civ-A5, 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. |
| 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. <u>NO notes or loose sheets are allowed.</u> Candidates MUST write the name and model number of their calculator on the inside front cover of the exam book. |
| 16-Civ-B3, Geotechnical Design | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 16-Civ-B4, Engineering Hydrology | 2 | CLOSED | Candidates are allowed to bring ONE 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 ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 16-Civ-B6, Urban & Regional Planning | 2 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|----------------------------------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|
| 16-Civ-B7, Transportation Planning and Engineering | 2 | CLOSED | Aid sheet is NOT permitted. |
| 16-Civ-B8, Management of Construction | 2 | CLOSED | NONE |
| 16-Civ-B9, The Finite Element Method | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 16-Civ-B10, Traffic Engineering | 2 | OPEN | NONE |
| 16-Civ-B11, Structural Materials | 2 | CLOSED | Aid sheet with formula only. One semi-log and two normal GRAPH papers needs to be printed. |
| 16-Civ-B12, Risk & Safety in Civil Engineering | 2 | OPEN | NONE |

| Name of Subject Computer | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|-------------------------------------|------------------|------------------------|-------------------------------------|
| 17-Comp-A1, Electronics | 2 | OPEN | NONE |
| 17-Comp-A2, Digital Systems Design | 2 | CLOSED | NONE |
| 17-Comp-A5, Operating Systems | 2 | CLOSED | NONE |
| 17-Comp-A6, Software Engineering | 1 | CLOSED | NONE |
| 17-Comp-B5, Computer Communications | 2 | CLOSED | NONE |

| Name of Subject Electrical | Format 1 or 2 | 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 ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. Aid sheet must be signed and submitted with exam. |
| 16-Elec-A3, Signals and Communications | 2 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|--------------------------------------------------------------------------------|---|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <u>No worked out solutions are allowed on this sheet.</u> |
| 16-Elec-A7, Electromagnetics | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <u>No worked out solutions are allowed on this sheet.</u> |
| 16-Elec-B1, Digital Signal Processing | 2 | CLOSED | Candidates are allowed to bring ONE 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 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 16-Elec-B3, Digital Communications Systems | 2 | CLOSED | NONE |
| 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 | 2 | OPEN | ONE Power System textbook permitted. |
| 16-Elec-B8, Power Electronics and Drives | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <u>No worked out solutions are allowed on this sheet.</u> |
| 16-Elec-B9, Electromagnetic Field, Transmission Lines, Antennas, and Radiation | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|------------------------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|
| 16-Elec-B10, Electro-Optical Engineering | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
|------------------------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|

| Name of Subject Environmental | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|------------------------------------------------------------|------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 18-Env-A1, Principles of Environmental Engineering | 2 | CLOSED | Candidates are allowed to bring ONE 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 ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 18-Env-A3, Geotechnical and Hydrogeological Engineering | 2 | OPEN | NONE |
| 18-Env-A4, Water and Wastewater Engineering | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 18-Env-A5, Air Quality and Pollution Control Engineering | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 18-Env-A6, Solid Waste Engineering & Management | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 18-Env-B1, Environmental Assessment and Management Systems | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 18-Env-B2, Water Resources | 2 | OPEN | NONE |
| 18-Env-B4, Site Assessment and Remediation | 2 | OPEN | NONE |
| 18-Env-B5, Industrial & Hazardous Waste Management | 2 | OPEN | NONE |
| 18-Env-B7: Environmental Sampling and Analysis | 2 | CLOSE | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| Name of Subject Geological | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|---------------------------------------------------|------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 18-Geol-A1, Mineralogy and Petrology | 1 | CLOSED | NONE |
| 18-Geol-A2, Hydrogeology | 2 | OPEN | NONE |
| 18-Geol-A3, Sedimentation and Stratigraphy | 1 | CLOSED | 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 ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. Graphing paper can be printed at: https://www.egbc.ca/getmedia/6033438e-2ea2-434f-b216-2073fd83219a/Graphing-Paper.aspx |
| 18-Geol-A6, Soil Mechanics | 2 | CLOSED | Compass and ruler required |
| 18-Geol-B1, Contaminant Hydrogeology | 2 | OPEN | NONE |
| 18-Geol-B3, Site Investigation | 2 | OPEN | NONE |
| 18-Geol-B4, Geomorphology and Pleistocene Geology | 1 | CLOSED | NONE |
| 18-Geol-B10-1, Gravity & Magnetic Fields | 1 | CLOSED | NONE |

| Name of Subject Geology & Environmental Geoscience | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|-------------------------------------------------------|------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 20-Gfund-4, Advanced Mathematics | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 20-Gfund-5, Mathematics | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae |
| 20-Gfund-8, Biology | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|--------------------------------------------------|---|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20-Gfund-12, Probability and Statistics | 2 | CLOSED | Candidates are allowed to bring ONE 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 |
| 20-Glgy-1, Mineralogy and Petrology | 1 | CLOSED | NONE |
| 20-Glgy-2, Sedimentation and Stratigraphy | 1 | CLOSED | NONE |
| 20-Glgy-4, Sedimentary Petrology | 1 | CLOSED | NONE |
| 20-Glgy-6, Structural Geology | 2 | CLOSED | Protractor, drawing compass and ruler are permitted. |
| 20-Glgy-7, Geochemistry | 2 | CLOSED | NONE |
| 20-Glgy-9, Geomorphology and Pleistocene Geology | 1 | CLOSED | NONE |
| 20- Glgy-10, Glacial and Quaternary Geology | 2 | CLOSED | NONE |
| 20-Glgy-20, Advanced Sedimentology | 1 | CLOSED | NONE |
| 20-Glgy-23, Rock Mechanics | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. Graphing paper can be printed at: https://www.egbc.ca/getmedia/6033438e-2ea2-434f-b216-2073fd83219a/Graphing-Paper.aspx |

| Name of Subject Geomatics | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|-------------------------------------|------------------|------------------------|-------------------------------------|
| 18-Geom-A1, Surveying | 2 | CLOSED | NONE |
| 18-Geom-A3, Geodesy and Positioning | 1 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|------------------------------------------------------|---|--------|------|
| 18-Geom-A4, Photogrammetry | 2 | CLOSED | NONE |
| 18-Geom-A5, Remote Sensing and Image Analysis | 2 | CLOSED | NONE |
| 18-Geom-A6, Cadastral Studies | 1 | CLOSED | NONE |
| 18-Geom-B1, Digital Terrain Modelling | 2 | CLOSED | NONE |
| 18-Geom-B3, Networks and Precise Engineering Surveys | 2 | CLOSED | NONE |
| 18-Geom-B5, Survey Law | 1 | CLOSED | NONE |

| Name of Subject Industrial | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|-----------------------------------------------------|------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17-Ind-A1, Operations Research | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 17-Ind-A2, Analysis and Design of Work | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 17-Ind-A3, Facilities Planning | 2 | CLOSED | Candidates will need a ruler, pencil, eraser for sketching. Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 17-Ind-A4, Production Management | 2 | CLOSED | NONE |
| 17-Ind-A5, Quality Planning, Control, and Assurance | 2 | CLOSED | Candidates are allowed to bring ONE 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 ONE 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 ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 17-Ind-B2, Manufacturing Processes | 2 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|----------------------------------------------------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|
| 17-Ind-B3, Computer Aided Design and Computer-Assisted Manufacturing | 2 | CLOSED | NONE |
| 17-Ind-B5, Ergonomics | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 17-Ind-B6, Workplace Design | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 17-Ind-B10, Workplace Health and Safety | 1 | CLOSED | NONE |

| Name of Subject Marine | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|-----------------------------------------------------|------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 98-Mar-A1, Applied Thermodynamics and Heat Transfer | 2 | 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 MUST write the name and model number of their calculator on the inside front cover of the exam book. |
| 98-Mar-A2, Fundamentals of Naval Architecture | 2 | OPEN | NONE |
| 98-Mar-B5, Fluid Machinery | 2 | CLOSED | Drawing instruments (scale ruler, protractor and sharp pencil) are required for vector diagrams. |

| Name of Subject Mechanical | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|-------------------------------------------------------|------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16-Mec-A1, Applied Thermodynamics and Heat Transfer | 2 | 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 MUST 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 | semi-log graph papers needed |
| 16-Mec-A4, Design and Manufacture of Machine Elements | 2 | OPEN | NONE |
| 16-Mec-A5, Electrical and Electronics Engineering | 2 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|------------------------------------------------------------------------------------------|---|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 | 2 | OPEN | NONE |
| 16-Mec-B2, Environmental Control in Buildings | 2 | CLOSED | Drawing instruments required (scale ruler, set square, sharp pencil) No other aids are permitted. Print charts and diagrams in advance of exam: https://www.egbc.ca/getmedia/e80aa7e6-bf1d-4e39-8146-8d730bc05a9d/PEO-Technical-Examinations-Required-Charts.pdf.aspx |
| 16-Mec-B3, Energy Conversion and Power Generation | 2 | CLOSED | Drawing instruments (scale ruler) Print chart in advance of exam: https://www.egbc.ca/getmedia/e80aa7e6-bf1d-4e39-8146-8d730bc05a9d/PEO-Technical-Examinations-Required-Charts.pdf.aspx |
| 16-Mec-B4, Integrated Manufacturing Systems | 2 | 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 | 2 | OPEN | NONE |
| 16-Mec-B12, Robot Mechanics | 2 | CLOSED | Candidates are allowed to bring ONE 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. |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|--------------------------|---|------|------|
| 16-Mec-B13, Biomechanics | 2 | OPEN | NONE |
|--------------------------|---|------|------|

| Name of Subject Metallurgical | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|------------------------------------------------------------------------------------|------------------|------------------------|-------------------------------------|
| 10-Met-A1, Metallurgical Thermodynamics | 2 | CLOSED | NONE |
| 10-Met-A2, Metallurgical Rate Phenomena | 2 | OPEN | NONE |
| 10-Met-A3, Metal Extraction Processes | 2 | CLOSED | NONE |
| 10-Met-A4/17-Phys-B7, Structure of Materials | 2 | CLOSED | NONE |
| 10-Met-A5, Mechanical Behaviour and Fracture of Materials | 2 | CLOSED | NONE |
| 10-Met-A6 , Phase Transformation and Thermal Treatment of Metals and Alloys | 2 | CLOSED | NONE |
| 10-Met-B1, Mineral Processing | 2 | CLOSED | NONE |
| 10-Met-B6, Physical Metallurgy of Iron and Steel | 2 | CLOSED | NONE |
| 10-Met-B7, Physical Metallurgy of Non-Ferrous Metals and Alloys | 2 | CLOSED | NONE |
| 10-Met-B10, Advanced Electronic Materials | 2 | CLOSED | NONE |

| Name of Subject Mechatronics | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|----------------------------------------|------------------|------------------------|-------------------------------------|
| 16-Mex-A1, System Analysis and Control | 2 | CLOSED | semi-log graph papers needed |
| 16-Mex-A2, Circuits and Electronics | 2 | CLOSED | NONE |
| 16-Mex-A3, Digital Systems Computers | 2 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non-programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|-----------------------------------------------------|---|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16-Mex-A4, Applied Thermodynamics and Heat Transfer | 2 | 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 MUST write the name and model number of their calculator on the inside front cover of the exam book. |
| 16-Mex-A5, Kinematics and Dynamics of Machines | 2 | OPEN | NONE |
| 16- Mex-A6, Systems Analysis and Simulation | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 16-Mex-B3, Advanced Control Systems | 2 | OPEN | NONE |
| 16-Mex-B5, Robot Mechanics | 2 | CLOSED | Candidates are allowed to bring ONE 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 ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <u>No worked out solutions are allowed on this sheet.</u> |

| Name of Subject Manufacturing | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|-------------------------------------------------------|------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 08-Mfg-A1, Design and Manufacture of Machine Elements | 2 | 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 | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 08-Mfg-A5, Facilities Planning | 2 | OPEN | Candidates will need a ruler, pencil, eraser for sketching. |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|----------------------------------------------------------------------|---|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 08-Mfg-A6, Quality Planning, Control and Assurance | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 08-Mfg-B1, Computer Aided Design and Computer-Assisted Manufacturing | 2 | CLOSED | NONE |
| 08-Mfg-B3, System Simulation | 2 | CLOSED | Candidates are allowed to bring ONE 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 |
| 08-Mfg-B5, Engineering Materials | 2 | OPEN | NONE |
| 08-Mfg-B6, Metrology | 2 | OPEN | NONE |
| 08-Mfg-B8, Robot Mechanics | 2 | CLOSED | Candidates are allowed to bring ONE 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-B9, Workplace Health and Safety | 1 | CLOSED | NONE |
| 08-Mfg-B10, Tooling, Jigs and Fixture Design | 2 | OPEN | NONE |
| 08-Mfg-B11, Fluid Machinery (Mec-A6 national) | 2 | CLOSED | Drawing instruments (scale ruler, protractor and sharp pencil) are required for vector diagrams. |
| 08-Mfg-B12, Ergonomics | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |

| Name of Subject Mining & Mineral | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|----------------------------------------------------------|------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 18-MMP-A1, General Geology and Exploration | 2 | CLOSED | NONE |
| 18-MMP-A2 , Underground Mining Methods and Design | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 18-MMP-A3 , Mineral Processing | 2 | CLOSE | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|------------------------------------------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|
| 18-MMP-A5 , Surface Mining Methods and Design | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 18-MMP-A6 , Mining and the Environment | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 18-MMP-B1 , Applied Rock Mechanics | 2 | OPEN | NONE |
| 18-MMP-B2, Rock Fragmentation | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 18-MMP-B3 , Material Handling | | | N/A |
| 18-MMP-B4, Occupational Health, Safety and Loss Management | 2 | OPEN | NONE |
| 18-MMP-B9, Rock Slope Engineering | 2 | OPEN | NONE |

| Name of Subject Materials | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|-------------------------------------------------------------------|---------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 12-Mtl-A1 , Materials Thermodynamics | 2 | OPEN | One textbook of your choice with notations listed on the margins etc., but no loose notes are permitted into the exam. |
| 12-Mtl-A2, Transport Phenomena in Materials Engineering | 2 | OPEN | One textbook of your choice with notations listed on the margins etc. are permitted for each section/part, but no loose notes are permitted |
| 12-Mtl-A3, Structure & Characterization of Materials | 2 | OPEN | NONE |
| 12-Mtl-A3, Structure & Characterization of Materials | 2 | OPEN | NONE |
| 12-Mtl-A4, Mechanical Behaviour and Fracture of Materials | 2 | CLOSED | NONE |
| 12-Mtl-A5, Phase Transformations of Metals, Glasses, and Ceramics | 2 | CLOSED | NONE |
| 12-Mtl-A6, Thermal Treatment of Metals, Glasses, Ceramics | 2 | CLOSED | NONE |
| 12-Mtl-B6, Physical Metallurgy of Iron and Steel | 2 | CLOSED | NONE |
| 12-Mtl-B10, Advanced Electronic Materials | 2 | CLOSED | NONE |
| 12-Mtl-B15- Joining of Material | 2 | OPEN | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| Name of Subject | Format | Closed or Open | Aids/Instructions to the Candidates |
|-----------------------------------------------------|--------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Naval | 1 or 2 | Book | |
| 16-Nav-A1, Fundamentals of Naval Architecture | 2 | OPEN | NONE |
| 16-Nav-A3, Hydrodynamics of Ships (II): Ship Motion | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 16-Nav-A4 – Ship Structure and Strength of Ships | 2 | CLOSED | NONE |
| 16-Nav-A5 – Ship Design | 2 | OPEN | NONE |
| 16-Nav-B1, Applied Thermodynamics & Heat Transfer | 2 | 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 MUST write the name and model number of their calculator on the inside front cover of the exam book. |
| 16-Nav-B3, Small Commercial Ships | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |

| Name of Subject | Format | Closed or Open | Aids/Instructions to the Candidates |
|--------------------------------------------------------------------|--------|----------------|-------------------------------------|
| Nuclear | 1 or 2 | Book | |
| 08-Nuc-A1, Introduction to Nuclear Physics and Nuclear Engineering | 2 | OPEN | NONE |

| Name of Subject | Format | Closed or Open | Aids/Instructions to the Candidates |
|-----------------------------------------------------|--------|----------------|-------------------------------------|
| Petroleum | 1 or 2 | Book | |
| 17-Pet-A2, Petroleum Reservoir Fluids | 2 | CLOSED | NONE |
| 17-Pet-A3, Fundamental Reservoir Engineering | 2 | CLOSED | NONE |
| 17-Pet-A4, Oil and Gas Well Drilling and Completion | 2 | OPEN | NONE |
| 17-Pet-A6, Reservoir Mechanics | 2 | OPEN | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|---------------------------------------------|---|--------|------|
| 17-Pet-A7, Secondary and Enhanced Recovery | 2 | OPEN | NONE |
| 17-Pet-B3, Oil & Gas Evaluation & Economics | 2 | CLOSED | NONE |
| 17-Pet-B4, Petroleum Geology | 2 | CLOSED | NONE |
| 17-Pet-B5, Well Testing | 2 | CLOSED | NONE |

| Name of Subject Engineering Physics | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|------------------------------------------------------|------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17-Phys-A1, Classical Mechanics | 2 | CLOSED | NONE |
| 17-Phys-A2 Statistical Physics | 2 | CLOSED | NONE |
| 17-Phys-A3, Electromagnetics | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. <u>No worked out solutions are allowed on this sheet.</u> |
| 17-Phys-A4, Quantum Mechanics | 2 | CLOSED | NONE |
| 17-Phys-A5-A, Electronic Materials and Devices | 2 | CLOSED | NONE |
| 17-Phys-B1, Radiation Physics | 2 | OPEN | NONE |
| 17-Phys-B3, Digital Systems and Computers | 2 | CLOSED | NONE |
| 17-Phys-B5, Systems and Control | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 17-Phys-B6, Applied Thermodynamics and Heat Transfer | 2 | 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 MUST write the name and model number of their calculator on the inside front cover of the exam book. |
| 17-Phys-B7, Structure of Materials | 2 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| Name of Subject Preliminary Studies | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|----------------------------------------|------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| 20-Prelim-1, Calculus | 2 | CLOSED | NONE |
| 20-Prelim-2, Computing | 2 | CLOSED | You may bring a non-programmable calculator and two-page double-sided formula sheet. No other reference materials of any type. |
| 20-Prelim-3, Physics | 2 | OPEN | You may bring any type of calculator, textbook and reference materials. |
| 20-Prelim-4, Chemistry | 2 | CLOSED | You may bring a non-programmable calculator, Data sheets will be provided |

| Name of Subject Software | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|------------------------------------------------|------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 19-Soft-A1, Algorithms & Data Structures | 1 | CLOSED | NONE |
| 19-Soft-A4, Real Time Systems | 1 | CLOSED | NONE |
| 19-Soft-A5, Requirements and Specifications | 2 | OPEN | NONE |
| 19-Soft-A6, Software Quality Assurance | 2 | OPEN | NONE |
| 19-Soft-A7, Software Development Process | 2 | CLOSED | Candidates are allowed to bring TWO aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 19-Soft-B4, Dependable System | 2 | CLOSED | NONE |
| 19-Soft-B13, Performance Analysis & Simulation | 2 | CLOSED | NONE |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| Name of Subject Structural | Format 1 or 2 | 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. <u>NO notes or loose sheets are allowed.</u> Candidates MUST 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 | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 07-Str-A4, Advanced Structural Analysis | 2 | CLOSED | NONE |
| 07-Str-A5, Advanced Structural Design | 2 | CLOSED | Design handbooks and textbooks are permitted. <u>NO notes or loose sheets are allowed.</u> Candidates MUST write the name and model number of their calculator on the inside front cover of the exam book. |
| 07-Str-A6-1, Applications of Finite Elements | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 07-Str-A6-3, Earthquake Engineering | 2 | OPEN | NONE |
| 07-Str-B1, Geotechnical Design | 2 | 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-B5, Foundation Engineering | 2 | OPEN | 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. |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| Name of Subject Transportation | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|-------------------------------------------------------|------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 07-Tra-A1, Introduction to Transportation Engineering | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 07-Tra-A2, Highway Design | 2 | OPEN | NONE |
| 07-TRA-A3, Traffic Engineering | 2 | OPEN | NONE |
| 07-Tra-A4, Pavement Materials, Design and Management | 2 | OPEN | NONE |
| 07-Tra-A6, Geotechnical Materials and Analysis | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 07-Tra-B1, Transit System | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 07-Tra-B6, Highway Construction | | | N/A |
| 07-Tra-B9, Traffic Safety | | | N/A |

| Name of Subject Water Resources | Format 1 or 2 | Closed or Open Book | Aids/Instructions to the Candidates |
|----------------------------------------------------------------|------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 07-Wrse-A2, Engineering Hydrology | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
| 07-WRSE-A3, Geotechnical and Hydrogeological Engineering | 2 | OPEN | NONE |
| 07-Wrse-A4, 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. |
| 07-Wrse-A6, Municipal and Environmental Engineering (PEO only) | 2 | OPEN | NONE |
| 07-Wrse-A7-1, Irrigation, Drainage | 2 | OPEN | NONE |
| 07-WRSE-B1, Geomorphology and Pleistocene Geology | 1 | CLOSED | NONE |
| 07-Wrse-B3, Water Supply and Wastewater Treatment | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)

EXAM FORMAT AND AIDS PERMITTED FOR FALL 2024 NATIONAL TECHNICAL SESSION

For open book exam, candidates may only use physical or printed copies of textbooks or notes. Digital copies of books or notes that require the use of a digital device are not permitted. We recommend candidates have eBooks or PDFs printed if they intend to use it for the examination(s)

| | | | |
|------------------------------------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|
| 07-Wrse-B11, Principles of Environmental Engineering | 2 | CLOSED | Candidates are allowed to bring ONE aid sheet 8.5" X 11" hand-written on both sides containing notes and formulae. |
|------------------------------------------------------|---|--------|---------------------------------------------------------------------------------------------------------------------------|

Format 1, No Calculators Permitted;

Format 2, Any non-communicating, and non-programmable calculator is permitted. (Casio or Sharp models are more common, but you are not limited to these two brands as long as the calculator is non -programmable and noncommunicating)