



पूर्वोत्तर क्षेत्रीय विज्ञान एवम् प्रौद्योगिकी संस्थान
North Eastern Regional Institute of Science & Technology
(Deemed to be University u/s 3 of the UGC Act, 1956)
Under the Ministry of Education, Govt. of India

निर्जुली - ७९१ १०९ (ईटानगर)
अरुणाचल प्रदेश, भारत

Nirjuli - 791 109 (Itanagar)
Arunachal Pradesh, India

NOTICE

Date: 12.9.23

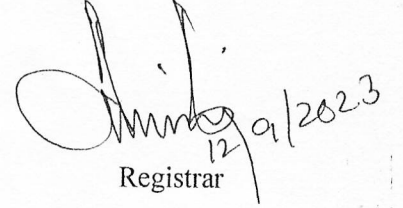
With reference to Advt. No. 01/2022 dated 24.05.2023 for the post of Assistant Professor the written Examination is scheduled as follows:

Date: 01.10.2023, Sunday

Time: 10.00 to 1.00 p.m (3 Hrs)

Venue: Academic Block (Core V), Indian Institute of technology (IIT) Guwahati, Guwahati – 781039, Assam

REPORTING TIME: 9.30 a.m


12/9/2023
Registrar

Ref: Advt. No. 01/2022 dated 24.05.2023, For the post of Assistant Professor;

For Written Examination

Syllabus Outline and Broad Topics

Agricultural Engineering

Farm Machinery and Machine Design; Sources of Power, Farm Power, Tractors and Power Tillers; Elements of Fluid Mechanics, Soil Mechanics, Hydrology, Surveying and Levelling, Soil and Water Erosion, Watershed Management; Soil-Water-Plant Relationship, Irrigation Water Conveyance and Application Methods, Agricultural Drainage, Groundwater Hydrology, Wells and Pumps; Engineering Properties of Agriculture Produce, Evaporation and Drying, Size Reduction and Material Handling, Processing of Agriculture Produce, Storage Systems; Heat and Mass Transfer, Preservation of Food.

Civil Engineering

Engineering Mechanics, Solid Mechanics, Structural Analysis, Construction Materials and Management, Concrete and Steel Structures; Soil Mechanics, Foundation Engineering; Fluid Mechanics, Hydraulics, Hydrology, Irrigation systems and methods; Water and Waste Water: Quality and Treatment, Air Pollution, Municipal Solid Wastes; Transportation Infrastructure, Highway Pavements, Traffic Engineering; Principles of surveying, Photogrammetry and Remote Sensing.

Computer Science

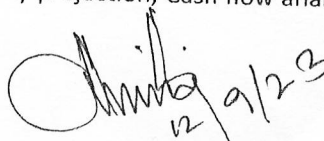
Digital Logic, Computer Organization and Architecture, Programming and Data Structures, Algorithms, Theory of Computation, Design of Compilers, Operating System, Databases, Computer Networks.

Chemistry

Physical chemistry: Structure, Group Theory, Spectroscopy, Equilibrium, Kinetics, Surfaces and Interfaces; Inorganic Chemistry: Main Group Elements, Transition Elements, Lanthanides and Actinides, Organometallics, Radioactivity, Bioinorganic Chemistry, Solids, Instrumental Methods of Analysis; Organic Chemistry: Stereochemistry, Reaction Mechanisms, Organic Synthesis, Pericyclic Reactions and Photochemistry, Heterocyclic Compounds, Biomolecules, Experimental Techniques in Organic Chemistry.

Economics

Principles of Economics – Definition and scope, Consumer behavior, Theory of production, Price and output determination and producers' equilibrium under different market situations in short run and long run, Pricing of factors of production: wage, interest, and rent, National income, Concepts of public finance, inflation, deflation, welfare economics; Entrepreneurship Development and Business Management – Concepts and characteristics, Government scheme and incentives, SWOT analysis, Supply chain management, Government policy on small and medium enterprises (SMEs)/SSIs, Public private partnership; Project Management and Financial Analysis – Project development cycle, Market and demand analysis, Profitability projection, Cash flow analysis, Break

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even analysis, Depreciation of fixed assets, Social benefit-cost analysis; Entrepreneurship and Startups – Entrepreneurship values and attitudes, Rural and women entrepreneurship, Qualitative methods for project evaluation, Features of startups and startup India program; Net present value estimation, Cost-benefit analysis; Forest Economics and Marketing – Economics of timber and non-timber forest products, Forest planning, policy and development; Marketing of Non-timber Forest Products – Regulation of international timber trade, essentials of WTO, Economics features of timber markets.

Electronics and Communications Engineering

Circuit Analysis; Continuous-time and discrete time Signals; Energy bands semiconductors, Carrier Transport, diodes and transistors; Diode Circuits, BJT and MOSFET Amplifiers, Op-amp Circuits; Number Representations, Combinatorial and sequential circuits, Data Converters, Semiconductor Memories, Computer Organization; Feedback Control Systems; Random Processes, Analog and digital Communications, Information Theory; Maxwell's Equations, Plane Waves, Transmission Lines and Waveguides.

Forestry

Forest Systematics and Ethnobiology; Forest Ecology and Biodiversity Conservation; Forest Protection; Forest Tree Improvement; Forest Biotechnology; Silviculture; Plantation Forestry; Forest Policies and Instruments; Community Forestry and Agroforestry; Wildlife Conservation and Ecotourism; Forest Hydrology and Watershed Management; Wood Science and Technology; Forest Goods and Services; Forest Geo-informatics; Forest Resource Management; and Forest Seed Technology.

Mathematics

Calculus; Linear Algebra; Real Analysis; Complex Analysis; Ordinary Differential Equations; Algebra; Functional Analysis; Numerical Analysis; Partial Differential Equations; Topology; Linear Programming.

Mechanical Engineering

Engineering Mechanics, Mechanics of Materials, Theory of Machines, Vibrations, Machine Design; Fluid Mechanics, Heat-Transfer, Thermodynamics, Application of Fluid Mechanics and Thermal Sciences; Engineering Materials, Casting, Forming and Joining Processes, Machining and Machine Tool Operations, Metrology and Inspection, Computer Integrated Manufacturing, Production Planning and Control, Inventory Control, Operations Research.

Physics

Mathematical Physics; Classical Mechanics: Lagrangian Formulation, Special Theory of Relativity; Electromagnetic Theory; Quantum Mechanics; Thermodynamics and Statistical Physics; Atomic and Molecular Physics; Solid State Physics; Electronic devices and circuits; Nuclear and Particle Physics.

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