Syllabus for Entrance Examination into M.Tech.(Geomatics) – 2014

Objective type 60 Questions – Duration of Exam 1 hour

I. COMPUTER GRAPHICS AND PROGRAMMING

Computer Graphics: Representative users of computer graphics, framework for interactive graphics, input devices, raster graphics features, scan converting incremental algorithm and mid point line algorithm for scan converting lines.

Introduction to `C': Fundamentals, structure of C functions, variables, constants, data types and arithmetic expressions, standard input-output functions, conditional statements.

Programming in `C' : Logical operations, program looping, operators, arrays, functions, structures, pointers, moduler programming, user defined data types input output from files libraries and generalized functions, recursion.

Suggested Reading Material:

1. Programming in `C' by Stephen G Kochan – Schaum`s Series.
2. Computer Graphics by Foley, Van dam, Feiner, Hughes
3. Any other standard books.

II. CONVENTIONAL SURVEYING, REMOTE SENSING AND PHOTOGRAMMETRY:

Conventional Surveying and Mapping: Surveying methods, Topographic Surveying, Theodolite application, General features of Survey of India topographic sheets, Map scale, Introduction to map projections, Introduction to cartography.

Remote Sensing Physics and Satellites: Physical Principles of Remote Sensing, Source of Electro Magnetic Energy, Electro Magnetic Spectrum, General aspects of Indian Space program.

Photogrammetry : Aerial Photo formats, Scales of aerial photograph Relief displacement, Elements of Photogrammetry, Stereoscopic products and applications.

Suggested Reading Material :

1. Photogrammetry by Wolf PR
2. Remote Sensing by Paul Curran
3. Cartography by Prof. Ramesh G
4. Any standard book on Surveying.

III GEO-SCIENCES.

Geography : Land forms origin, classification and distribution, elements of weather and climate, heating of atmosphere, temperature, atmospheric pressure, winds, humidity, evaporation and condensation, precipitation.

Soils : Mechanical composition of soil - soil texture, Irrigation – Irrigation methods, Soil salinity and water quality. Soil conservation – Soil erosion, water erosion, types of water erosion factors affecting soil erosion. Estimation of soil loss, erosion control, wind erosion, factors influencing with erosion, control of wing erosion.

Suggested Reading Material :

1. Physical Geography by Tikka
2. Soil Physics by M.C. Oswal
3. Geology by P.K.Mukhergie
4. Any standard Book on Geo Sciences.

PROBABILITY AND STATISTICS

Probability : Sample space and events, axioms of probability, finite probability spaces, infinite sample spaces, conditional probability, multiplication theorem for conditional probability, independence, independent or repeated trails, binomial distribution, normal distribution.

Statistics: Sample mean and sample variance**,** random variable discrete and continuous distributions, means and variance of distribution, estimation of parameters, confidence intervals, testing of hypothesis.

Suggested Reading Material :

1. Probability and Statistics – Schaum's Series or any other standard books.

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