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**SYLLABUS FOR DEPARTMENT PROMOTION EXAMINATION FOR
MR. FALAH-UD-DIN SR. RESEARCH OFFICER (RTL) WAPDA FAISALABAD
FROM GRADE 18 TO GRADE 19.**

Paper- II (Technical)

1. Measuring Elements & Methods: -

Unit, Standards, Uncertainty in Measurements, Time, Temperature, Laboratory Safety, Graphing, Stress / Strain.

2. Principles of Testing & Inspection Techniques.

3. Testing Procedures of

Energy Meters, ACSR/Al: Conductors, PVC Cables, Rubber Insulating Gloves, Transformer Oil, Stay Rod, Nuts & Bolts, Chain Pulley Blocks, Manila Rope.

4. Basic Electric Parameters, such as

Electric circuits, Energy & Power, Energy Meters, Transformers, Generators, Measurement of Current, Resistance & Potential, ohms Law.

5. Mechanical Properties of Metals, such as

Metallic structure, Work Hardening, Heat Treatment, Temperature Annealing, Shaping & Forming, Machining, (Definition).

6. Fiber and Textile: -

Mechanical properties, Thermal properties, Chemical Resistance, Gas & Liquid Permeability & Tactile properties.

References: -

1. The Testing & Inspection of Engineering Materials (Third Edition).
By Davis, Troxell, Wiskocil, Professors of Civil Engineering, University of California, U.S.A.
2. Focus on Physical Science
By Charles H. Heimler, California State University, California, U.S.A.
3. Physical Science (Part 6), 2nd Edition & (Part-I) Edition 1.
By Eugene Mc Ginnis PhD Chairman Deptt of Physics University of Scranton U.S.A
4. Engineering Material, Part-III (Edition I).
By Henry R. clauses (Material consultant) Formely Edition & Publisher, Material Engg. Scranton, Pennsylvania, U.S.A.
5. Wapda specifications:
DDS-22, DDS-10, P-37, DDS-53, P-50, P-63, P-37, DDS-29, DDS-8, P-49 & IEC-296.

Ph. J. K.