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REVISED SYLLABUS 2022
DEPARTMENTAL PROMOTION EXAMINATION
FROM SENIOR RESEARCH OFFICER TO SUPERINTENDING RESEARCH OFFICER
(CEMENT & CONCRETE)

PAPER-I **CURRENT AFFAIRS AND RULES & REGULATION** **100 Marks**

(Pass Marks 47)

Part-I **Current Affairs**

33 Marks

(Pass marks 40%)

Current Affairs paper will be set from leading issues published in the newspaper for the last 3 months. The following books may be consulted.

- Monthly Current Affairs Digest by Tariq Mahmood Dogar
- Monthly Current Affairs Digest by Dr. Safdar Mahmood
- Any other Current Affairs Digest

Paper-II **Rules & Regulations (Books allowed)**

67 Marks

- The Pakistan WAPDA Employees (E&D) Rules, 1978
- The Pakistan WAPDA Employees (Retirement) Rules, 1979
- The Pakistan WAPDA Leave Rules for WAPDA Employees 1982
- The Pakistan WAPDA TA Rules 1982.
- WAPDA Act
- Conduct Rules
- Medical Attendance Rules.

Reference Books

- WAPDA Book of Financial Powers January 2033
- WAPDA Act 1958
- WAPDA Manual of General Rules (including addendums)

PAPER-II **TECHNICAL**

100 Marks

(Pass marks 50)

Properties of Portland Cement (Physical Testing): Determination of Soundness of Cement, Determination of initial and final set, Determination of specific surface area (fineness of cement), and Determination of comprehensive strength of hydraulic cement Chemical testing and Alkalies and Constituents of cement.

CONCRETE AND AGGREGATE TESTING

AGGREGATE: Grading analysis, Specific gravity, Water absorption, Unit weight and voids in aggregate, Loose and rodded density, Clay lumps and friable particles, Soundness of aggregate, Flakiness and elongation indices, Sand equipment test, Aggregate impact value, Aggregate crushing value, Specification of concrete aggregate, Test method for compressive strength of cylindrical concrete specimens, Flexural strength of concrete and Loss angles abrasion test


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Fresh Concrete: Slump test, Casting of cylinders and cubes, Air entertainment and Unit weight

Hardened Concrete: Crushing strength of concrete cylinders, Crushing strength of concrete cubes and Non-destructive testing of concrete, Test of potential alkali reactivity of aggregates of cement aggregate combination and test of water double chlorides present as admixture in graded aggregate.

Brick Testing: Compressive strength, efflorescence in bricks, absorption % of bricks and measurement of size

Steel Testing: Type and shapes of steel bars, Grades of the steel bars, Calculation of unit wt. of the steel bar, % age elongation & bend test.


Computer (Information Technology): Introduction to Computer System, M.S. Word and M.S. Office: Characteristic of computer, types of computer, computer hardware and software, types of memory and functions, operating systems, input/out and storage devices, types of memory and functions, operating systems, input/out and storage devices, main features of utility of MS Word, MS Excel, MS Power Point, Internet and E-mail.

Reference Book

- Properties of Concrete by A.M. Neville
- Design and control of concrete mixtures (Portland Cement Association) ASTM 04.01&04.02
- British Standards for Aggregate and Cement
- Microsoft Word 2007 for Microsoft Office-XP, International Edition, Advantage Series by Sarah E. Hutchison & Glan J. Caulthar
- Window XP Professional. The Ultimate User Guide by Coriolis
- Microsoft Power Point 2007 by Stephen HAAG

NOTE (1): One question from Computer (Information Technology) is **compulsory** to be included in paper-II (Technical).

NOTE (2): The paper will be 50% objective and 50% subjective.


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