

SYLLABUS FOR WRITTEN TEST (CIVIL)

1- APPLIED MECHANICS

Introduction, Laws of forces, Moment, Friction, Centre of Gravity, Simple Machines.

2- STRUCTURAL MECHANICS

Properties of Materials, Simple Stresses and Strains, Shear Force and Bending Moment, Moment of Inertia, Bending Stresses in Beams, Shear Stresses in Beams, Slope and Deflection, Columns, Analysis of Trusses, Stability of dams.

3- CONCRETE TECHNOLOGY

Introduction, Cement, Aggregates, Water, Properties of Concrete, Workability, Strength, Proportioning for Normal Concrete, Introduction to Admixtures, Special Concretes (only features), Concreting Operations, Mixing, Importance and methods of non-destructive tests (introduction only)

4- DESIGN OF REINFORCED CONCRETE & STEEL STRUCTURES

Introduction, Working stress method, Limit state method, Shear and Development Length, Singly Reinforced Beam, Doubly Reinforced Beams, Behavior of Flanged beams, One Way Slab, Two Way Slab, Axially Loaded Column, Basic concepts of Column Footings, Introduction to Structural Steel and Sections, Riveted Connections, Welded connections, Tension Members, Compression Members, Roof Trusses(only concept), Columns, Beams, Masonry structures - Design of brick column and wall foundations .

5- CONSTRUCTION MATERIALS & BUILDING CONSTRUCTION:

Building Stone, Bricks and Tiles, Cement, Lime, Timber and Wood Based Products, Paints and Varnishes, Metals, Glass, Foundations, Walls, Stone Masonry, Brick Masonry, Arches and Lintels, Doors, Windows and Ventilators, Damp Proofing and Water Proofing, Floors, Roofs, Surface Finishes, Anti Termite Measures, Elements of Engineering Seismology, General features of tectonic of seismic zones, Causes of earthquakes, Provision of reinforcement detailing in masonry and RC constructions,

6- CONSTRUCTION MANAGEMENT & ACCOUNTS

Introduction, Construction Planning, Organization, Site Organization, Construction Labor, Labor Welfare Fund Act 1936, Payment of Wages Act 1936, Minimum Wages Act 1948, Control of Progress, Inspection and Quality Control, Accidents and Safety in Construction, Public Work Accounts- Technical sanction, allotment of funds, re-appropriation of funds bill, contractor ledger, measurement book running and final account bills, hand receipt, acquittance roll. Muster Roll, budget-stores, returns, account of stock, T&P verification, survey report, road metal material charged direct to works, account - expenditure & revenue head, remittance and deposit head, definition of cash, imprest account, temporary advance, treasury challan.

7- QUANTITY SURVEYING AND VALUATION

Types of estimates, Measurement, Calculation of quantities of materials, Analysis of Rates, Preparation of Tender Document, Valuation.

8- FLUID MECHANICS

Introduction, Properties of Fluids, Hydrostatic Pressure, Measurement of Pressure, Fundamentals of Fluid Flow, Flow Measurements, Flow through Pipes, Flow through open channels, Hydraulic Pumps.

9- WATER SUPPLY & WASTE WATER ENGINEERING

Introduction, Quantity of Water , Quality of Water, Water Tréatment (brief introduction), Conveyance of Water, Laying out Pipes , Building Water Supply, Sewerage System, Sewage characteristics, Natural Methods of Sewerage Disposal, Sewage Treatment, Building Drainage.

10- IRRIGATION ENGINEERING

Introduction, Water Requirement of Crops, Hydrological Cycle Catchment Area and Run-off, Methods of Irrigation, Canals, Tube Well Irrigation, Dams, Introduction to Canal Head Works and Regulatory Works, Cross Drainage Works, River Training Works, Water Logging and Drainage and Ground Water Re-charge.

11- SURVEYING

Introduction, Chain surveying, Compass surveying, Levelling, Plane Table Surveying, Contouring, Theodolite Surveying, Tacheo-metric surveying.

12- SOIL AND FOUNDATION ENGINEERING

Introduction, Physical Properties of Soils, Classification and Identification of Soils, Flow of Water Through Soils, Deformation of Soils, Shear Strength Characteristics of Soils, Compaction, Soil Exploration, Bearing Capacity of soil, Foundation Engineering- shallow and deep foundations.

13- HIGHWAY ENGINEERING

Introduction, Road Geometrics, Highway Surveys and Plan, Road Materials, Road Pavements, Hill Roads, Road Drainage, Road Maintenance, Road Construction Equipment, Airport Engineering.

14- RAILWAYS, BRIDGES & TUNNELS

Introduction to Indian Railways, Railway surveys, Classification of permanent way describing its component parts, Rail Gauge, Rail Fastenings, Sleepers, Ballast, Crossings and signaling, Maintenance of track, Earth work and drainage, Bridges & culverts, Classification of Bridges, Bridge Foundations, Inspection of bridges, Routine maintenance, Definition and necessity of tunnels, Typical section of tunnels for a national highway and single and double broad, gauge railway track, Drainage method of draining water in tunnels.

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Syllabus for Written Test (Computer)

1. Information Technology - its concept and scope, applications of IT, impact of computer and IT in society.
2. Computers for information storage, information seeking, information processing and information transmission.
3. Computer Application in office, book publishing, data analysis, accounting, investment, inventory control, graphics, Air and Railway Ticket reservation, robotics, Military, banks, Insurance financial transactions and many more.
4. Elements of computer system, computer hardware and software; data types- numeric data, alpha numeric data; contents of a program, processing.
5. Computer organization, block diagram of a computer, CPU, memory.
6. Input devices; keyboard, Scanner, mouse etc; output devices; VDU and Printer, Plotter.
7. Electrical requirements, inter-connections between units, connectors and cables.
8. Secondary storage; magnetic disks- tracks and sectors, optical disk (CD, CD-RW and DVD), primary and secondary memory; RAM, ROM, PROM etc., Capacity; device controllers, serial port, parallel port, system bus.
9. Installation concept and precautions to be observed while installing the system and software.
10. Introduction about Operating Systems such as MS DOS, Windows, Windows NT etc. as an interface to Computer System.
11. Special features, various commands of MS word and MS-Excel, MS PowerPoint.
12. About the internet- server types, connectivity (TCP/IP, shell); applications of Internet like; e-mail and browsing.
13. Various Browsers like Internet explorer, Mozilla Fire fox, WWW (World Wide Web); hyperlinks; HTTP (Hyper Text Transfer Protocol); FTP (File Transfer Protocol).

14. Basics of Networking- LAN, WAN, Topologies
15. Ethics and information Technology.
16. Future with Information Technology.

Sumit
24/12/14

Mr.

James

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Subject:	Recommended Syllabus for English and Test Paper
Objective:	To test the basic English Language Proficiency for recruitment for the post of Junior Engineer (Civil) in Engineering Department, Chandigarh (UT)
Test Type:	Objective Type Written Examination
No. of Questions:	20
Total Marks:	20
Time:	40 Minutes
Syllabus:	1) Reading (08 Marks) Testing Competencies: Conceptual Understanding & Interpretation 2) Grammar & Usage (06 Marks) Testing Competency: Identification of Accurate Structure 3) Vocabulary (06 Marks) Testing Competencies: Inferring Literal and Contextual Meaning
