CIVIL ENGINEERING

DIPLOMA/DEGREE

जिल्हा परिषद
मृद व जलसंधारण भरती

TECHNICAL SUBJECTS

- कनिष्ठ अभियंता
  (स्थापत्य / ग्रा.पा.पु./लघु पाटबंधारे)

संपूर्ण मार्गदर्शक

STRICTLY BASED ON

TCS & IBPS PATTERN

ZP
WCD

infinity® Academy

FEATURES

- Based on New Syllabus for ZP Recruitment
- Included MCQ's for all subjects
- Framed by Experts & Experienced faculties
- For better understanding arranged in simple & Easy language
- All in one book

CIVIL ENGINEERING Degree/Diploma

जिल्हा परिषद
मृद व जलसंधारण भरती

संपूर्ण मार्गदर्शक

1000+ PYQ's आणि

अतिसंभाव्य प्रश्नांसह

- सर्व टेक्निकल विषयांचा समावेश
- ZP/WCD च्या सर्व पदांसाठी उपयुक्त
- सर्व विषयांचे वस्तुनिष्ठ बहुपर्यायी प्रश्न
- १००० पेक्षा जास्त प्रश्नाचा समावेश
- उत्तम आकलनासाठी सध्या व सोप्या भाषेत मांडणी
- जलद उजळणी साठी उपयुक्त

पुस्तक मागणीसाठी संपर्कः

8263954946 / 9607155111

प्रकाशक

Infinity Publications, Pune

प्रथम आवृत्ती : जून 2023

द्वितीय आवृत्ती : ऑगस्ट 2023

वितरणासाठी संपर्क

8263954946
9607155111

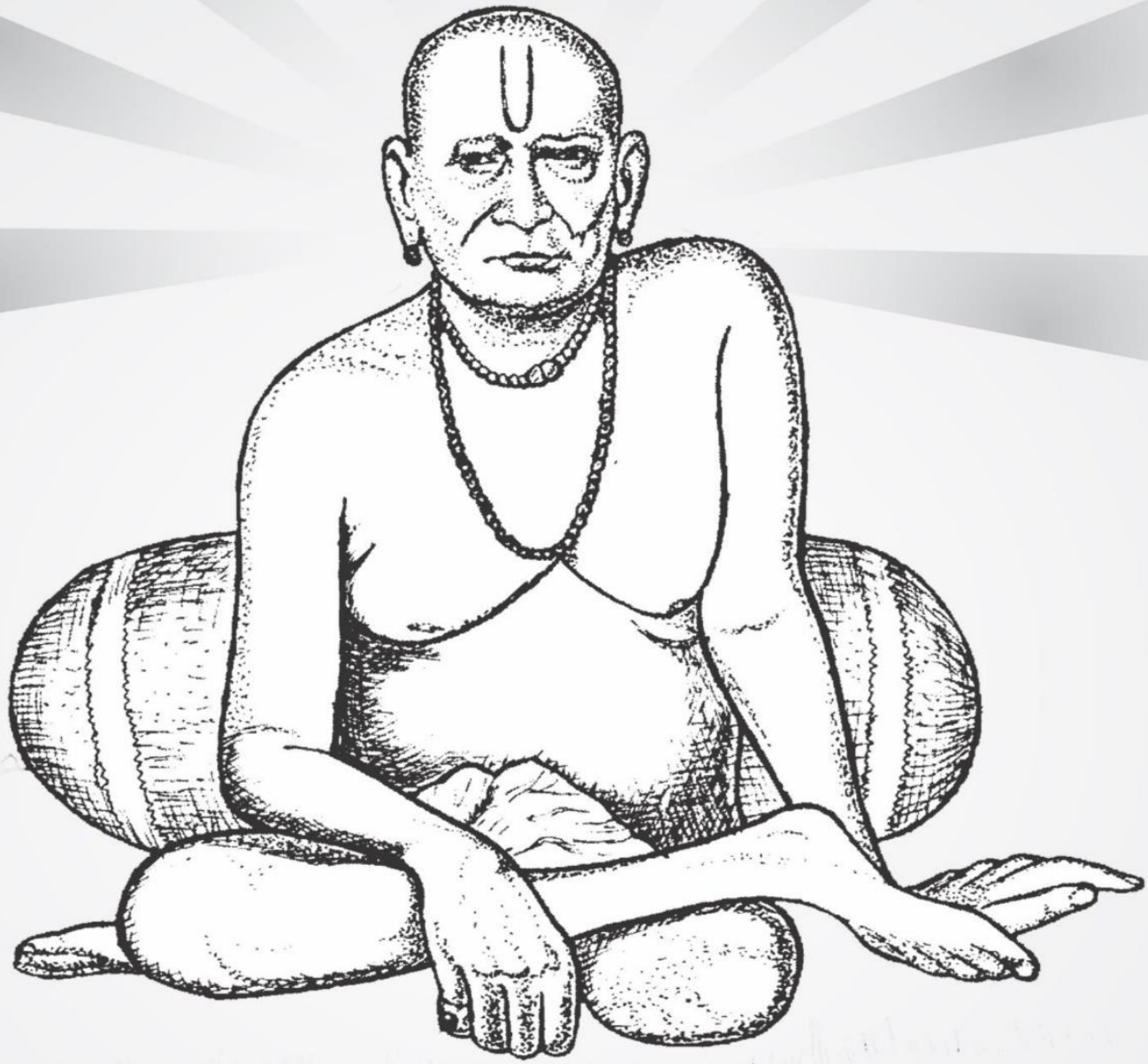
अक्षरजुळणी, सजावट व मुखपृष्ठ

Team Infinity

We Have made all possible effort to make this book error free however it is request to all students, if you find any error or want to give suggestions that we can incorporate into future editions, feel free Send us email infinityacademyofficial1809@gmail.com

डिसक्लेमर : या पुस्तकाचे संपादन व मुद्रण करताना योग्य ती काळजी व खबरदारी घेतलेली आहे. अनावधानाने राहून गेलेल्या आणि अनावधानाने निर्माण होणाच्या चुकीबद्दल आम्ही दिलगिर आहोत .त्यासाठी लेखक, प्रकाशक किंवा मुद्रक यांची कुठलीही जबाबदारी नाही .संकलनातून निर्माण होणाऱ्या व त्याच्याशी संबंधित कुठल्याही प्रकारची देणी, नुकसानभरपाई यातून Infinity Publication मुक्त आहेत. सर्व पुणे न्यायालयाच्या कक्षेत

infinity® Engineering Academy



श्री स्वामी समर्थ...

स्वामींच्या चरणी अर्पण ...

लेखकाचे मनोगत

नमस्कार,

स्पर्धा परिक्षाची तयारी करणाऱ्या सिव्हील इंजिनिअरींगच्या परिक्षार्थ्यांना '' जिल्हा परिषद ''आणि ''मृद व जलसंधारण भरती'' संपूर्ण मार्गदर्शक हे पुस्तक सादर करताना अत्यंत आनंद होत आहे.

'' जिल्हा परिषद ''आणि ''मृद व जलसंधारण भरती'' संपूर्ण मार्गदर्शक मध्ये महाभरती होणार आहे अनेक विद्यार्थी या परीक्षेची तयारी करताना दिसतात. त्यांना एकाच पुस्तकात सर्व विषयांचा अभ्यास करता यावा, या उद्देशाने या पुस्तकाची निर्मिती करण्यात आली आहे. अशा प्रकारचं हे एकमेव पुस्तक आहे.

PYQ आणि अतिसंभाव्य प्रश्न या पुस्तकात आहे. BCM, Engg.Mech,SOM,TOS ,DSS, Public Health Engg. या सारखे एकूण १५ विषय यात समाविष्ट आहे .

'' जिल्हा परिषद ''आणि ''मृद व जलसंधारण भरती'' मधील कनिष्ठ अभियंता / स्थापत्य अभियांत्रिकी सहाय्यक पदांसाठी हा अभ्यासक्रम खूप उपयुक्त आहे . ZP च्या मागील परीक्षेतील प्रश्नांचा उत्तरासहित यात समावेश आहे. उत्कृष्ठ व आकर्षक मांडणी ,विषयवार आणि मुद्देसूद मांडणी हे या पुस्तकांचे वैशिष्ट्य आहे

त्यामुळे हे पुस्तक तुम्हाला परिपूर्ण तयारीसाठी निश्चित उपयुक्त ठरेल.

अशाप्रकारे या पुस्तकाचा अभ्यास तुम्हाला तुमच्या स्पर्धा परिक्षेच्या प्रवासासाठी मार्गदर्शक ठरेल, यात शंका नाही. हे पुस्तक सर्व परिक्षार्थ्यांसाठी अनिवार्य आहे.

'इन्फिनिटी अॅकॅडमी'च्या सर्व टीमचा मी आभारी आहे, ज्यांनी सखोल अभ्यास आणि संशोधन करून कमी वेळात हे पुस्तक आपल्यासमोर सादर केले आहे. त्यांच्याशिवाय हे अशक्य होते.

आपल्या स्वप्नांचा पाठपुरावा घेण्यासाठी सज्ज व्हा. तुमच्या या प्रवासात आम्ही तुमच्यासोबत आहोत. स्पर्धा परिक्षांची तयारी करणाऱ्या सर्व परिक्षार्थ्यांना पुढील वाटचालीसाठी खूप खूप शुभेच्छा...!

सदर पुस्तकात चुका आढळल्यास 7057492418 या क्रमांकावर वॉट्स अॅप मेसेज करा.

आपला
गिरीश खेडकर
9158999422

infinity® Engineering Academy

INDEX

1 BUILDING MATERIALS & CONSTRUCTION	**1**
1 CEMENT	2
2 CONCRETE, AGGREGATE AND WATER	6
3 STONES AND BRICKS	13
4 LIME AND MORTAR	16
5 TIMBER	18
6 ADMIXTURE	21
7 ARTIFICIAL MATERIALS	22
8 SUSTAINABLE MATERIALS	23
9 MISCELLANEOUS TOPICS	26
10 BUILDING BYE-LAWS & PRINCIPLES OF PLANNING	29
11 FOUNDATION & MASONRY CONSTRUCTION	34
12 STAIRCASE, OPENING & ROOF	40
13 MISCELLANEOUS TOPICS	45
14 PREVIOUS YEAR QUESTIONS	48
15 QUESTIONS FOR PRACTICE	53
2 ENGINEERING MECHANICS	**64**
1 INTRODUCTION	65
2 SYSTEM OF FORCES	66
3 ANALYSIS OF PIN-JOINTED PLANE FRAMES	67
4 FRICTION	68
5 CENTROID AND MOMENT OF INERTIA.	69
6 PREVIOUS YEAR QUESTIONS	71
7 QUESTIONS FOR PRACTICE	71
3 STRENGTH OF MATERIALS	**77**
1 STRESS AND STRAIN	78
2 PRINCIPAL STRESSES	82

3 SHEAR FORCE & BENDING MOMENT 84
4 BENDING STRESSES 85
5 SHEAR STRESSES IN BEAMS 86
6 TORSION 87
7 COLUMNS 89
8 DEFLECTION OF BEAM 89
9 PREVIOUS YEAR QUESTIONS 91
10 QUESTIONS FOR PRACTICE 93

4 THEORY OF STRUCTURES 98
1 DEGREE OF INDETERMINACIES 99
2 TRUSSES 101
3 METHOD OF STRUCTURAL ANALYSIS 103
4 SLOPE DEFLECTION METHOD 103
5 PREVIOUS YEAR QUESTIONS 106
6 QUESTIONS FOR PRACTICE 106

5 DESIGN OF REINFORCED CONCRETE STRUCTURES 111
1 BASIC CONCEPT OF RCC 112
2 WORKING STRESS METHOD 114
3 LIMIT STATE METHOD 115
4 TORSION 119
5 SLAB 119
6 COLUMN 121
7 FOOTING 122
8 STAIRCASE 123
9 DESIGN OF WATER TANKS 125
10 PREVIOUS YEAR QUESTIONS 129
11 QUESTIONS FOR PRACTICE 130

UNIT 6 DESIGN OF STEEL STRUCTURES 133

1 INTRODUCTION 134

2 CONNECTION 136

3 TENSION MEMBERS 144

4 COMPRESSION MEMBER 145

5 BEAM 148

6 COLUMN BASES & FOUNDATIONS 150

7 PLATE GIRDER 152

8 GANTRY GIRDER 154

9 TRUSSES 155

10 PREVIOUS YEAR QUESTIONS 157

11 QUESTIONS FOR PRACTICE 158

7 CONSTRUCTION PLANNING & MANAGEMENT 163

1 MANAGEMENT 164

2 PROJECT MANAGEMENT & NETWORK THEORY 165

3 PERT AND CPM 167

4 COST, RESOURCES, & CPM UPDATING 169

5 EQUIPMENTS 171

6 ACTS RELATED TO WORKERS AND INDUSTRY 175

7 PREVIOUS YEAR QUESTIONS 180

8 QUESTIONS FOR PRACTICE 180

8 SURVEYING 184

1 FUNDAMENTAL CONCEPTS OF SURVEYING 185

2 MEASUREMENT OF DISTANCES 187

3 COMPASS SURVEYING 189

4 LEVELLING 192

5 CONTOURING 194

6 THEODOLITE 195

7 THEODOLITE TRAVERSE 197
8 PLANE TABLE SURVEYING 199
9 TACHEOMETRY 200
10 CURVE 201
11 COMPUTATION OF AREA AND VOLUME 203
12 GPS & GIS 204
13 OPTICAL AND ELECTRONICS DEVICES 205
14 PREVIOUS YEAR QUESTIONS 206
15 QUESTIONS FOR PRACTICE 208

9 ESTIMATION COSTING AND VALUATION 213

1 ESTIMATE AND COSTING 214
2 UNITS OF MEASUREMENT 216
3 RATE ANALYSIS 221
4 SPECIFICATION 222
5 CONTRACT AND TENDER 224
6 VALUATION 228
7 PREVIOUS YEAR QUESTIONS 232
8 QUESTIONS FOR PRACTICE 232

10 GEOTECHNICAL ENGINEERING 237

1 PROPERTIES OF SOIL 238
2 CLASSIFICATION OF SOIL 243
3 PERMEABILITY 243
4 SEEPAGE THROUGH SOILS 246
5 STRESS DISTRIBUTION IN SOILS 248
6 SOIL COMPACTION 249
7 COMPRESSIBILITY & CONSOLIDATION OF SOIL 251
8 SHEAR STRENGTH OF SOILS 254
9 EARTH PRESSURE, 255
10 STABILITY OF SLOPES 258
11 BEARING CAPACITY AND FOUNDATION 260

12 FOUNDATION 263
13 SOIL EXPLORATION & SOIL IMPROVEMENT 268
14 PREVIOUS YEAR QUESTIONS 269
15 QUESTIONS FOR PRACTICE 271

11 FLUID MECHANICS 277

1 INTRODUCTION OF FLUID 278
2 PRESSURE AND ITS MEASUREMENT 280
3 BUOYANCY AND FLOTATION 283
4 KINEMATICS OF FLOW 284
5 DYNAMICS OF FLUID FLOW 288
6 ORIFICES & NOTCHES 290
7 FLOW THROUGH PIPES 291
8 DIMENSIONAL ANALYSIS 293
9 BOUNDARY LAYER THEORY 296
10 LAMINAR AND TURBULANT FLOW 297
11 OPEN CHANNEL FLOW 300
12 FLUID MACHINES 304
A. HYDRAULIC TURBINE 306
B. HYDRAULIC PUMP 310
13 PREVIOUS YEAR QUESTIONS 313
14 QUESTIONS FOR PRACTICE 316

12 WATER RESOURCES ENGINEERING 322

1 INTRODUCTION 323
2 PRECIPITATION 324
3 ABSTRACTION FROM PRECIPITATIONS 328
4 SURFACE WATER HYDROLOGY 331
5 HYDROGRAPHS 332
6 FLOODS 335
7 FLOOD ROUTING 336
8 WELL HYDRAULICS 338

9 RESERVOIR PLANNING 339
10 IRRIGATION PRINCIPLES & PRACTICES 341
11 SOIL, WATER, PLANT RELATIONSHIP 342
12 WATER REQUIREMENTS OF CROPS 343
13 WATER LOGGING AND LINING OF CANAL 344
14 CANAL IRRIGATION 346
15 CANAL REGULATION WORK 348
16 CANAL HEADWORKS AND SEEPAGE 351
17 RIVER & RIVER TRANING WORKS 353
18 CROSS DRAINAGE WORKS 355
19 DAMS, SPILLWAYS, ENERGY DISSIPATION 357
20 SPILLWAYS & ENERGY DISSIPATER 360
21 PREVIOUS YEAR QUESTIONS 362
22 QUESTIONS FOR PRACTICE 364

13 HIGHWAY ENGINEERING 372

1 HIGHWAY DEVELOPMENT & PLANNING 373
2 HIGHWAY ALIGNMENT 375
3 HIGHWAY GEOMETRIC DESIGN 376
4 SIGHT DISTANCE 379
5 DESIGN OF HIGHWAY ALIGNMENT 381
6 VERTICAL ALIGNMENT 384
7 TRAFFIC ENGINEERING 385
8 HIGHWAY MATERIAL 390
9 PAVEMENT DESIGN 394
10 DESIGN OF RIGID PAVEMENT 398
11 PREVIOUS YEAR QUESTIONS 400
12 QUESTIONS FOR PRACTICE 401

14 BRIDGE ENGINEERING 408

1 INTRODUCTION 409
2 BRIDGE FOUNDATIONS 412

3 BEARINGS 414
4 MISCELLANEOUS TOPICS 416
5 QUESTIONS FOR PRACTICE 417

15 PUBLIC HEALTH ENGINEERING 420

1 WATER DEMAND 421
2 SOURCES OF WATER 422
3 CONDUITS FOR WATER SUPPLY 423
4 PIPE APPURTENANCES 424
5 WATER QUALITY 425
6 WATER TREATMENT 428
7 DISTRIBUTION SYSTEM 431
8 WASTE WATER CHARACTERISTICS 433
9 DISPOSING OF THE SEWAGE EFFLUENTS 434
10 DESIGN OF SEWERAGE SYSTEM 436
11 SEWAGE TREATMENT 438
12 SLUDGE DIGESTION 441
13 SOLID WASTE MANAGEMENT 442
14 AIR POLLUTION 444
15 NOISE POLLUTION 447
16 PREVIOUS YEAR QUESTIONS 448
17. QUESTIONS FOR PRACTICE 451

TECHNICAL SUBJECTS

infinity® Engineering Academy

BUILDING MATERIALS & CONSTRUCTION

ZP SYLLABUS

CONCRETE TECHNOLOGY
Cement-Grades, Test, Properties, Aggregates, Concrete, Test On Concrete, Factors Affecting Concrete, Water Cement Ratio, Aggregate Cement Ratio, Mix Design,Quality Control Of Concrete, Additives In Concrete
CONSTRUCTION MATERIALS
Stones, Bricks, Cement, Lime, Mortar, Timber, Plastic, Concrete, Steel, Paints And Varnishes Bitumen, Mastic Asphalt, Emulsion, Cutback, Stone, Matrix Asphalt, Fly Ash, Sustainable Building Materials, Glass, Artificial Materials.
BUILDING PLANNING AND CONSTRUCTION
Principles Of Building Planning And Design, Building Bylaws, Building Services Such As Vertical Transportation, Water Supply, Sanitation, Thermal Ventilation, Lighting, Acoustics. Types Of Foundations, Brick And Stone Masonry, Types Of Floors, Doors And Windows, Roofs, Finishing Works, Water Proofing, Types Of Formwork.

DESIGN OF REINFORCED CONCRETE STRUCTURES

ZP SYLLABUS

DESIGN OF REINFORCED CONCRETE STRUCTURES (LSM)
Design Of Slab, Beams, Columns, Footing. **Water Tanks (WSM).**

infinity® Engineering Academy

1 BASIC CONCEPT OF RCC

Basic Indian Standard Codes for Structural Design:

- IS 456: 2000 - Plain and reinforced concrete.
- IS 875: 1987 (Part-I to V) - Code of practice for design loads.
  - Part 1: Dead loads
  - Part 2: live loads
  - Part 3: wing loads
  - Part 4: snow loads
  - Part 5: special loads and load combinations
- IS 1893: 2002 - Criteria for earthquake resistant design of structures.
- IS 13920: 1993 - Ductile detailing of RC structure subjected to seismic forces.

Characteristic Strength of Concrete

- Characteristic strength of concrete is the value of strength of concrete below which not more than 5% of test results are expected to fail.

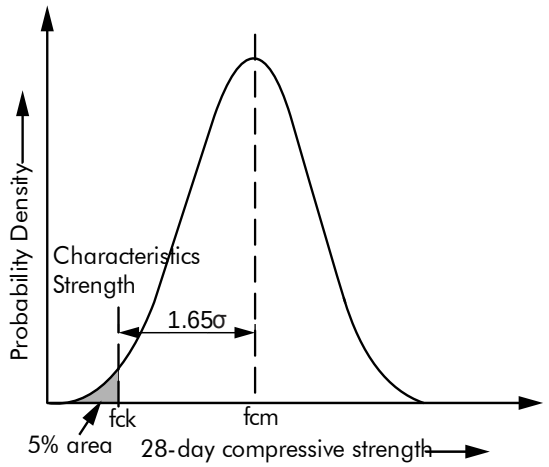


fig. idealised normal distribution of concrete strength

$$\text{Coefficient of variation} = \frac{\text{Standard deviation}}{\text{Mean strength}}$$

- The coefficient of variation varies generally in the range of 0.01 to 0.02. With higher degree of quality control, this variation can be reduced.

1. Strength of concrete in uniaxial comparison is determined by testing a standard cube 150 mm size and is loaded till its failure.
2. The cube specimen is tested after 28 days of casting and curing.
3. As per IS 456: 2000, there should be three specimens in a sample.
4. Individual variation in the strength of cubes should not vary by more than $\pm 15\%$ of average strength and if the variation is more then the test results are discarded.

Grade of Concrete

- The grade of concrete is expressed in terms of its characteristic compressive strength (of 150 mm cube at 28 days) expressed in N/mm^2 or MPa.
- Minimum grade of concrete based on exposure conditions as per IS: 456

Exposure Condition	Minimum Concrete Grade
Mild	M20
Moderate	M25
Severe	M30
Very Severe	M35
Extreme	M40

Concrete Mix Design

Various grades of concrete as per IS 456: 2000:

Concrete Grade	Type of Concrete
M10	Ordinary grade concrete
M15	
M20	
M25 - M55	Standard grade concrete
M60 - M100	High Strength concrete

➢ The direct tensile strength of concrete is about 7 to 15 % of the compressive strength of concrete.

Modulus of Rupture of Concrete:

- As per IS 456: 2000, it is defined as:

$$f_{cr} = 0.7\sqrt{f_{ck}}$$

Poisson's Ratio:

- It is the ratio of lateral strain to the longitudinal strain under uniform uniaxial stress.
- For concrete, Poisson's ratio range from 0.1 to 0.3. For design purposes, a value of 0.15 or 0.2 is considered.

The Working Stress Method (WSM) of Design:

- WSM is based on service loads conditions alone.
- $\text{Factor of safety} = \frac{\text{Strength of the material}}{\text{Allowable stress in the material}}$
- $\text{Modular Ratio} = \frac{\text{Stress in steel } (f_s)}{\text{Stress in concrete } (f_c)} = \frac{E_s}{E_c}$

The Ultimate Load Method (ULM) of Design

- The ULM is also called as the load factor method or the ultimate strength method.
- ULM is based on ultimate load conditions alone.
- $\text{Load Factor} = \frac{\text{Ultimate or design load}}{\text{Working or service load}}$

The Limit State Method (LSM) of Design

- LSM takes into account the safety at ultimate load and serviceability at service loads.
- Limit state of collapse:
  - Flexure
  - Compression/ Tension
  - Shear
  - Torsion
- Limit state of serviceability:
  - Deflection
  - Excessive vibrations
  - Corrosion
  - Cracking

IS 456: 2000 Recommendations for LSM of Design

1. Characteristic Strength and Characteristic Load:

- **Characteristic strength:** of a material is that strength below which not more than 5% of the test results are expected to fall.
  - Concrete grade in RCC = M20
  - RCC in coastal areas = M30
- **Characteristic load:** is that load which has the 95% probability of not being exceeded during the life time of the structure.

2. Partial safety factor for materials:

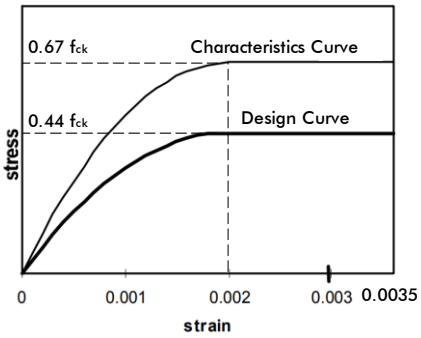
Limit state of collapse	Limit state of serviceability
1. Steel – 1.15	1. Steel – 1.00
2. Concrete – 1.50	2. Concrete – 1.00

3. Partial safety factor for loads:

Load Combination	Limit State of Collapse			Limit State of Serviceability		
	DL	LL/IL	WL or EQ	DL	LL/IL	WL or EQ
1. DL + LL	1.5	1.5	-	1.0	1.0	-
2. DL + WL or EQ	1.5	-	1.5	1.0	-	1.0
3. DL+LL+WL or EQ	or 0.9* 1.2	1.2	1.2	1.0	0.8	0.8
(*) This value is considered for stability against overturning or where there is a possibility of stress reversal.						

$$\text{Design Load} = \text{Partical safety factors for load} \times \text{Characteristic load}$$

Design stress-strain curve for concrete:



Characteristic and design stress strain curve of concrete

- Characteristic strength of concrete is taken as $\mathbf{0.67}f_{ck}$.
- Design strength of concrete is $\mathbf{0.67}f_{ck}/\gamma_c$.
- Permissible stress in concrete$= \frac{0.67f_{ck}}{1.5} = 0.446f_{ck}$
- For uniformly compressed concrete (as in axially loaded columns), the maximum strain in concrete is taken as 0.002 or 0.2%.
- When concrete is subjected to axial compression and flexure, then the maximum strain in concrete is limited in between 0.002 and 0.0035.

Design stress strain curve for reinforcing steel:

SCAN QR CODE

TO JOIN OUR CHANNEL

JOIN US
YOUTUBE CHANNEL

JOIN US
ZP HYBRID BATCH APP

JOIN US
ZP PLAYLIST YOUTUBE

JOIN US
TELEGRAM CHANNEL

JOIN US
INSTAGRAM CHANNEL

JOIN US
FACEBOOK CHANNEL

infinity® Engineering Academy

No.1 INSTITUTE for MPSC CIVIL ENGINEERING
HIGHEST NO. OF SELECTIONS ALL OVER MAHARASHTRA

infinity® Academy

- स्पर्धा परीक्षेमधील 7 वर्षांहून अधिक अग्रगण्य नाव
- महाराष्ट्र अभियांत्रिकी सेवा (MES)
  स्थापत्य /विद्युत /यांत्रिकी साठी
  पूर्व + मुख्य + मुलाखत या तिन्ही टप्याची तयारी करवून घेणारी
  महाराष्ट्रातील नं 1 अॅकॅडमी
- 3500+ अधिकारी घडविणारी संस्था
- OFFLINE व ONLINE माध्यमातून मार्गदर्शन

महाराष्ट्र शासनामधील विविध विभागातील होणाऱ्या सरळसेवा भरती परीक्षाची तयारी करून घेणारी संस्था. कनिष्ठ अभियंता /अभियांत्रिकी सहाय्यक / नगर रचनाकार सहाय्यक या परीक्षेसाठी (टेक्निकल +नॉन टेक्निकल) विषय तज्ञ् अनुभवी मार्गदशकांकडून शिकवले जातात.

सर्व स्पर्धा परीक्षेची तयारी करवून घेण्यासाठी इन्फिनिटी अॅकॅडमी मध्ये तज्ञ् शिक्षक वर्ग आहेत.

विविध विषयासाठी (टेक्निकल +नॉन टेक्निकल)DEDICATED अनुभवी शिक्षक वर्ग असल्यामुळे स्पर्धा परीक्षेतील प्रत्येक विषयाला योग्य न्याय दिला जातो व तो विषय उत्तमप्रकारे शिकवले जातो.

विद्यार्थ्यांची स्पर्धा परीक्षेमार्फत शासनात निवड हे एकमेव ध्येय इन्फिनिटीच्या अनुभवी शिक्षकांचे आहे

No.1 INSTITUTE for MPSC CIVIL ENGINEERING
HIGHEST NO. OF SELECTIONS ALL OVER MAHARASHTRA

infinity® Academy

NO.1 ENGINEERING INSTITUTE

AEE (CIVIL) 2023 — RUSHIKESH RAOSAHEB DHAMNE

Proud To Be No.1 Institute In Maharashtra

MES RANK 1 MECHANICAL

PRATIK AGAWANE

MES RANK 1 ELECTRICAL

SANKET SHINDE

HARSHAL SANJAY KHAIRNAR
सहाय्यक नगर रचनाकार (ATP)

KALYANI BHADANE
सहाय्यक नगर रचनाकार (ATP)

RANK 1st IN MAHARASHTRA

infinity®
Engineering Academy

New Batches

MPSC MES (CE | ME | EE)

FOUNDATION BATCH

PRE + MAINS + INTERVIEW

CIVIL ALL DIRECT RECRUITMENT

PWD | WRD | WCD | MIDC | ZP | NAGARPARISHAD

ELECTRICAL

- MAHATRANSCO BATCH
- MAHAGENCO BATCH

MECHANICAL

- ARTO BATCH
- RTO AMVI BATCH

MPSC ATP

FOUNDATION BATCH

ONLINE + OFFLINE

All Batches Available

TEST SERIES FOR ALL COMPETITIVE EXAMS

PUNE | Infinity Academy, First Floor, Mankar Wada, Near Modi Ganpati,Narayan Peth, Pune.

Join us on telegram
@infinitympsccivil

9699897070
788 781 1411