MARATHA VIDYA PRASARAK SAMAJ'S
Karmaveer Adv. Baburao Ganpatrao Thakare
College of Engineering, Nashik
NBA NATIONAL BOARD OF ACCREDITATION · MECHANICAL · COMPUTER · INSTRUMENTATION AND CONTROL · CIVIL · INFORMATION TECHNOLOGY (IT)
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Department of Civil Engineering

Innovative Teaching Method: Study of Soil Layers on field

Name of Faculty: Dr. S.J. Kadbhane **Class: SE**

Academic Year: 2022-23 **Semesters: II**

Name of Subject: Geotechnical Engineering

Objectives of Methodology:

1. To aware student with actual field strata
2. To develop an interest in field observation and Site Exploration

Details of Activity/Method:

In this teaching method, A general description of the foundation and soils encountered on the project, and a description of the terrain, including drainage, erosion patterns, high water elevation, flooding, and any other specific conditions that may be of value in the design of structures. The set of Geotechnical Engineering Multiple Choice Questions and answers (MCQs) focuses on “Site Exploration”.

1. Which of the following is proved to be useful, ongoing over the site?
a) Excavation
b) Escarpments
c) Flood marks
d) All of the mentioned

2. The methods of site investigation are dependent upon _____
a) Climatic condition
b) Nature of engineering project
c) Local topography
d) All of the mentioned

3. The information that should be yielded on-site exploration is_____
a) Rock formation
b) Depth of groundwater
c) Structural loading
d) All of the mentioned

4. In site exploration, the depth up to which the increase in pressure is likely to cause shear failure is known as _____
a) Failure depth
b) Significant depth
c) Pressure depth
d) Depth of exploration

5. Depending upon the details, the site exploration may be classified as _____
a) General and Detailed
b) Complex
c) None of the mentioned
d) All of the mentioned

6. The general exploration gives information about which of the following features?
a) Depth of rock
b) Composition of soil strata
c) Ground water level
d) All of the mentioned

7. For pile foundations, the depth of exploration at the start of the work is _____
a) 10 meters
b) 40 meters
c) 70 meters
d) 200 meters

8. What are the methods used for general exploration?
a) Subsurface penetration
b) Ground water exploration
c) Rock Cuttings
d) All of the mentioned

9. The feature that helps to estimate the relative density of coarse-grained soil is _____
a) Soundings
b) Shallow test pits
c) Exploratory borings
d) Geophysical method

10. The number and disposition of bore holes are varied, depending upon _____
a) Surroundings
b) Strata
c) Subsoil condition
d) Ground water

11. In detailed exploration, the field test is conducted to determine _____
a) Tensile strength
b) Rigidity
c) Permeability
d) Water content

12. The various method of site exploration can be grouped under, which of the following?
a) Open excavations and Borings
b) Soil strata
c) None of the mentioned
d) All of the mentioned

13. Exploratory borings in general exploration is carried out by using _____
a) Auger
b) Bore equipment
c) Well curb
d) All of the mentioned

Assessment is summaries in the table below

Assessment Tools & Rubrics:

Exam No.	Name of Students	Knowledge of subject (4)	Understanding (4)	Timely (2)	Final Marks (10)
S190290001	AHIRE HARSHAL DAYANAND	3	3	1	7
S190290003	BACHHAV RUCHIR DAMODAR				
S190290004	BACHHAV SIDDHARAJ MAHENDRA				
S190290005	BAGUL VARAD KIRAN				
S190290006	BEDIS TEJAS ANIL	3	3	2	8
S190290007	BEZEKAR PRATIK SOMNATH	2	2	1	5
S190290008	BHAMARE RUTUJA PRADIP	3	3	1	7
S190290009	BHARITKAR YASH SOMNATH	3	3	2	8
S190290010	BHAWANA SUNIL KOTWAL	3	3	1	7
S190290011	BHOI GAURAV SUNIL				
S190290012	BODKE VIVEK VIJAY	2	2	1	5
S190290013	BURKUL SAURABH SANJAY	3	3	2	8
S190290014	CHAUDHARI ANIKET SAVALIRAM	2	2	1	5
S190290015	CHAVAN HARSHALI SANJAY	3	3	2	8
S190290016	CHAVAN PRANAV VIJAY	2	2	1	5
S190290017	CHHAJED HARSH PRITESH	3	3	1	7
S190290018	DAGALE JAYA SANTOSH	3	3	1	7
S190290019	DATIR ADITYA RAJENDRA	3	3	2	8
S190290020	DEORE YAMINI ANIL	3	3	1	7
S190290021	DESHMUKH ROHIT VIJAY	2	2	1	6
S190290022	GAIKWAD KETAN DEELIP	3	3	1	7
S190290023	GAIKWAD YASH SATISH				
S190290024	HANDGE SHLOK VILAS	3	3	1	7
S190290025	JADHAV MANOJ DEELIP	3	3	1	6
S190290026	JADHAV SAYALI VINOD	3	3	2	8
S190290027	JOSHI NIRAJ SURYAKANT	2	2	1	5
S190290028	KADAM AVINASH ANIL	2	2	1	5
S190290029	KADAM SIDDHESH BALWANT	2	2	1	4
S190290030	KAKAD RAMESHWAR SUNIL	3	3	2	8

S190290031	KALE ABHISHEK DHANANJAY	0	0	0	1
S190290032	KALE KARAN SUNIL	2	2	1	5
S190290033	KATAD DEEPAK DATTATRAY	3	3	1	7
S190290034	KATORE BHUSHAN GANPAT	3	3	1	7
S190290035	KHODE KIRTI KISHOR	3	3	2	8
S190290036	KOLPE AKSHADA SAHEBRAO	2	2	1	5
S190290037	KORALE SHRUSHTI HEMANT	3	3	2	8
S190290038	KORDE OM DEEPAK	3	3	2	8
S190290039	KOTHULE SAHIL PRABHAKAR	2	2	1	6
S190290040	KUMAVAT DHANASHREE DNYANESHWAR	3	3	1	7
S190290041	MAIND TANISHA HARISH				
S190290043	MURKUTE TEJASWINI SANJAY	4	4	2	9
S190290044	NAGAPURE POOJA DNYANESHWAR	3	3	2	8
S190290045	PAGAR ARCHIES SUDARSHAN	2	2	1	5
S190290046	PAGAR PRATIK SANDIP	2	2	1	6
S190290047	PAGARE APURVA SATISH				
S190290048	PANDE NARENDRA SUNIL				
S190290049	PATHADE JAHNAVI VIJAY	2	2	1	6
S190290050	PATHAK MANASI MUKESH	3	3	1	6
S190290051	PATIL BHAGYASHRI RAVSAHEB	3	3	1	7
S190290052	PATIL MANDAR ANIL	3	3	2	8
S190290053	PAWAR ANANDRAJ GAJENDRA	3	3	1	7
S190290054	PINJARI ARBAJ FIROJ	4	4	2	9
S190290055	RONAK SANDIP AGRAWAL	2	2	1	5
S190290057	SAMRUDDHI AVINASH SHIRSATH	3	3	1	7
S190290058	SANGLE VRUSHALI MANIK				
S190290060	SHAIKH UMME AMMARAH IMRAN	3	3	1	6
S190290061	SIDDHI MANOHAR PATIL	2	2	1	5
S190290062	SONAR PRATHMESH GIRISH	2	2	1	6
S190290063	SONAR SOHAM SUNIL	4	4	2	9
S190290064	SONAWANE PRAJWAL RAVINDRA	2	2	1	5

S190290065	SONAWANE SAKSHI SHASHIKANT	4	4	2	9
S190290066	SONAWANE SAMEER MOHAN	2	2	1	6
S190290067	SURAOKAR RUGVED SANDIP				
S190290068	TEJAS SOPAN KHADE	3	3	1	7
S190290069	THAKUR NIKHIL PRAMOD	4	4	2	9
S190290070	THATTE ADVAIT YOGESH				
S190290071	THETE RUSHIKESH SANTOSH	3	3	1	7
S190290072	UGALE ADITYA DHANANJAY	3	3	1	7
S190290073	VISPUTE LOKESH KAMALAKAR	3	3	2	8
S190290074	WAGH ATUL VISHNU	3	3	2	8
S190290075	WAGH SIDDHI BABASAHEB	2	2	1	6
S190290076	ZIRWAL BHAGYASHREE CHHAGAN	2	2	1	6

Course Outcomes:

	After the completion of the course, students will be able to:	BTL
CO5	Evaluate the earth pressure due to backfill on retaining structures by using different theories	5
CO6	Analysis of stability of slopes for different types of soils	3

POs (Related to Methodology)

PO2	**Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO4	**Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	**Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PSOs (Related to Methodology)

PSO1	Graduates will able to apply fundamental knowledge, problem solving skills, engineering experimental abilities and design capabilities necessary for entering civil engineering career.
PSO3	Graduates will be able to apply technical and professional skills to be nationally competitive for employment/self-employment thereby benefit the society

Evidences: Activity Photographs/Videos/Sample PPT's : Photo

Recorded Video Link :

Feedback/Impact Analysis (Based on Students Feedback):

Course Outcome

	Course Outcome	CO5	CO6
A	Students Achieving CO	53	53
B	Total Rating	60	60
C	Average Rating (A/B)	88.33	88.33

Program Outcome and Program-Specific Outcome

	Program Outcome	PO2	PO4	PO5	PSO1	PSO2	PSO3
A	No. of Groups/Students Achieving PO	53	53	53	53	53	53
B	Total Rating	60	60	60	60	60	60
C	Average Rating (A/B)	88.33	88.33	88.33	88.33	88.33	88.33

Recorded Video Link :

https://docs.google.com/forms/d/e/1FAIpQLScoiBCpaQgU_zFMrZaVaEK9x1iRQOHM9enXkQgPBoau8vVN3g/viewform?usp=sf_link