



**ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL**

Approved by : All India Council for Technical Education, Council of Architecture, Pharmacy Council of India New Delhi,
Recognised by : Directorate of Technical Education, Govt. of Maharashtra, Affiliated to : University of Mumbai.

- SCHOOL OF ENGINEERING & TECHNOLOGY
- SCHOOL OF PHARMACY
- SCHOOL OF ARCHITECTURE

B.ARCH. FOURTH YEAR - SEMESTER VII (NOVEMBER 2017)

SUBJECT: ARCHITECTURAL BUILDING CONSTRUCTION 7

Duration: 2 hours

TOTAL MARKS: 50

Date: 30/10/2017

Notes:

- Question 1 is compulsory.
- Attempt any 3 questions from Question No 2 to Question No 8.
- Support all answers with neat sketches.
- Question one carries 20 Marks and Question 2,3,4,5,6,7 & 8 carry 10 Marks each.

Q1. Design Pile Foundation for a Basement of size 30Mtrs X 45 Mtrs with two storeys below the Ground level. Each floor has a height of 4Mtrs. Height of the pile can be considered on individual basis.

Details to be shown:

- a. Reinforcement details of the Pile and the Pile Cap.
- b. Plan of group type of Piles (whether 3/4/5).
- c. Pile Cap details.
- d. Details of foundation above Pile Cap.

OR

Q1. Draft any one type of construction technology used in building a High Rise. Give details wherever necessary. Data can be considered on an individual basis.

Write in detail about the different types of formworks used in the construction of a high rise building. Give sketches wherever necessary.

Q2. Write short notes on the following: (Any Four)

- a. Silty Soil
- b. Steel Piles
- c. Basements
- d. Liquefaction of Soil
- e. Effects of earthquake on R.C.C. structures.
- f. Steam Hammer method in Pile foundation Driving

Q3. What are different types of criteria for foundation selection? What are the basic requirements of a safe foundation?

Innovative Teaching - Exuberant Learning

Vision : To be the most sought after academic, research and practice based school of Architecture that others would wish to emulate.



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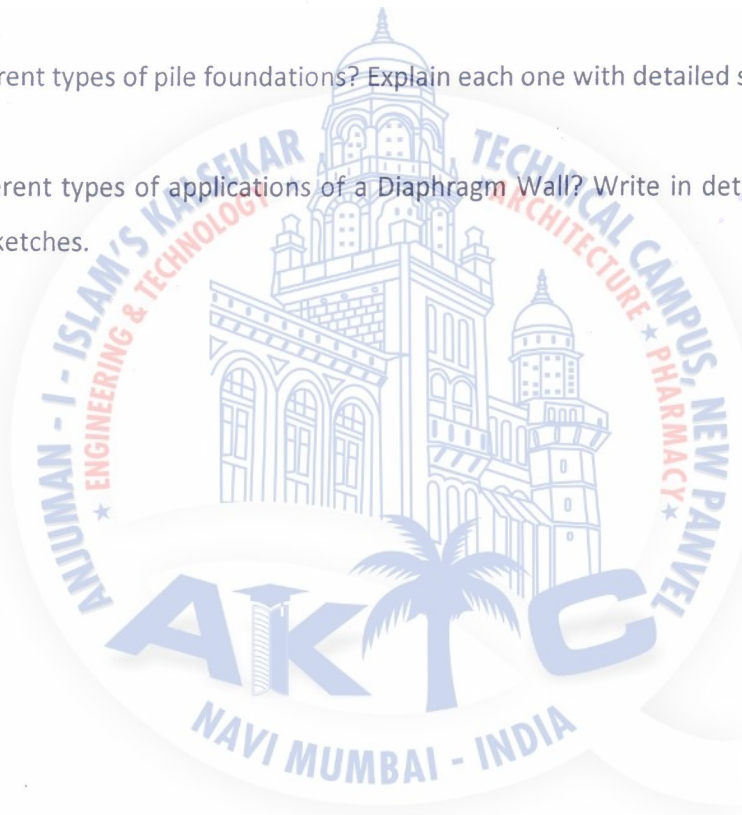
Q4. What are Diaphragm walls? Write down in detail the construction methodology of a diaphragm wall with neat sketches.

Q5. What are the different elements of design of High Rise buildings? Elaborate each element in detail.

Q6. Discuss about types of structural failures in case of earthquake with neat sketches.

Q7. What are different types of pile foundations? Explain each one with detailed sketches.

Q8. What are different types of applications of a Diaphragm Wall? Write in detail about each application with explanatory sketches.



**B.ARCH. FOURTH YEAR- SEMESTER VII, NOV-DEC 2017**

SUBJECT: Arch. Building Services

Duration: 2 hours

TOTAL MARKS: 50

Date: 01/11/2017

- Question no.1 & 2 are compulsory, attempt any one from remaining.
- Numbers on the right hand side indicate marks.
- Draw neat and proportionate sketches wherever required.

Q1. Design of a Mechanical Ventilation system {20}

A plot of size 65 x 55 mts with a commercial building (having basement) with adjoining 18 mts wide road on longer side, and site margins as follows:

Front: 12 mts Rear and sides: 8 mts

Design a basement parking layout with mechanical ventilation system for the same, showing Retaining wall and protective brick wall, column grid, plenum and exhaust room, ramp, water stretch, soak pit, motor pump, ducts and diffusers etc. Plinth ht is 0.90m and total floor ht of the basement is 4.2 mts with max. Beam depth of 600mm.

Drawing Requirement: Plan and Section

Q2. Explain the refrigeration cycle of an Air conditioning system and its components with a neat diagram, and explain the working of a chilled water based central air conditioning system with neat sketch? {15}

Q3. What are the different types of fans that are commonly used in a ventilation system?

Explain the working and features of a split air conditioner. Support your answers with neat diagrams. {15}

Q4. Write brief Notes on any three: {15}

- (1) A.H.U
- (2) Components of a central AC system
- (3) Factors affecting thermal comfort
- (4) Packaged Air Conditioner