

Knowledge Resource & Relay Centre (KRRC)

AIKTC/KRRC/SoA/ACKN/QUES/ 2021-22 /

Date: 02/08/2022School: SoA-CBSGSBranch: SoASEM: III

To,
Exam Controller,
AIKTC, New Panvel.

Dear Sir/Madam,

Received with thanks the following **Semester/Periodic** question papers from your exam cell:

Sr. No.	Subject Name	Subject Code	Format		No. of Copies
			SC	HC	
1	Architectural Building Construction			✓	
2	Theory and Design of Structures			✓	
3	Architectural Building Services			✓	
4	Humanities			✓	
5	Environmental Studies				
6	Architectural Representation & Detailing				

Note: SC – Softcopy, HC - Hardcopy

(Shaheen Ansari)
Librarian, AIKTC



**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

Subject - Architectural Building Construction and Materials III

Max Marks - 70

Date - 23/04/2022

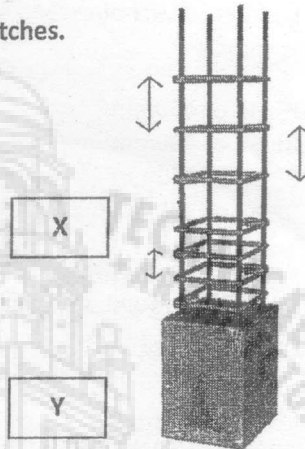
Duration - 3hrs.

Read questions carefully and write down with neat drawn sketches.
Proper sketches will carry more weightage of marks.
Answer according to the marks allotted.
All questions are compulsory.

Q.1 MCQ type questions:

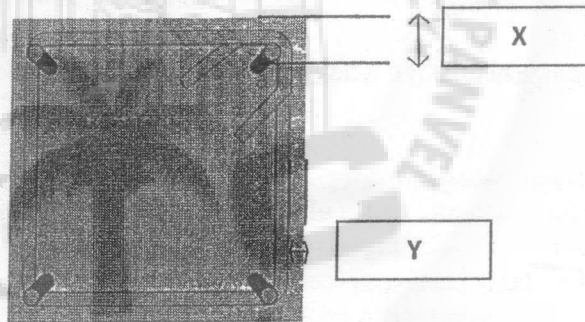
A. What should be the measurement at X and Y (2 marks)

- a. X:200mm and Y:100mm
- b. X:400mm and Y:200mm
- c. X:800mm and Y:1000mm
- d. X:100mm and Y:50mm



B. What should be the dimension of the concrete cover space main bar (X) and ties (Y) (2 marks)

- a. X: >25mm and Y: >15mm
- b. X: >35mm and Y: >25mm
- c. X: >50mm and Y: >25mm
- d. X: >15mm and Y: >10mm



C. Minimum spacing of Vertical Stirrups in a rectangular beam should not exceed- (2 marks)

- a. 0.75d/300mm
- b. 0.50d/200mm
- c. 0.60d/200mm
- d. 0.85/300mm



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D. The maximum spacing between two secondary parallel bars in a beam shall be:

(2 marks)

- 5d or 450mm whichever is less
- 3d or 300mm whichever is less
- 4d or 400mm whichever is less
- 5d or 300mm whichever is less

E. The maximum spacing of bars shall not exceed Main Steel(A) – _____ whichever is smaller Distribution steel(B) – _____ whichever is smaller

(2 marks)

- (A): 2d or 300mm, (B): 5d or 450mm
- (A): 5d or 300mm, (B): 3d or 450mm
- (A): 3d or 300mm, (B): 5d or 450mm
- (A): 2d or 450mm, (B): 3d or 300mm

Q.2 Describe in brief the types of footing with appropriate sketches

(5marks)

Q.3 What is a frame structure system? Explain in brief with sketches

(5marks)

Q.4 What are the rules of Column design with sketches?

(5marks)

Q.5 Write down the definition of column and the reasons for column failure?

(5marks)

Q.6 Write down the purpose of stirrups in reinforcement?

(5marks)

Q.7 Explain concrete cover in beams, columns & slabs with relevant sketches

(5marks)

Q.8 Describe in brief the types of footing with appropriate sketches

(5marks)

Q.9 Calculate Area of Footing, where Load (P) = 2500 kN, Column size = 450 mm x 450 mm and Soil Bearing Capacity = 150 kN/m². Calculate Depth of Footing, where Load of structure (P) = 60KN/m², Density of soil (W) = 16KN/m² and Angle of repose = 20 degrees

Diameter of the Main reinforcement bars = $d_m = 18\text{mm}$

Diameter of Distribution Reinforcement Bars = $d_d = 18\text{mm}$

Spacing of Main reinforcement bars = $s_m = 150\text{mm c/c}$

Spacing of Distribution Reinforcement bars = $s_d = 150\text{mm c/c}$

Cover for reinforcement = $c = 50\text{mm}$

4 bars of 12mm dia for column and stirrup dia of 8mm spaced at 150mm and 200mm at L/3 respectively.

Draft relevant diagrams correlating the dimensions given explaining the type of footing used.

(25marks)

***** END OF PAPER *****

SECOND YEAR B.ARCH - SEM III ATKT EXAMINATION APRIL 2022

Subject - TOS
 Date -18/04/2022

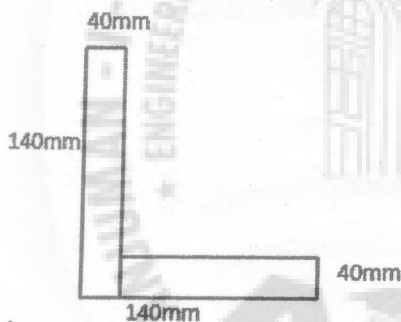
Max Marks - 50
 Duration - 2hrs.

- 1) Question No 1 is compulsory.
- 2) From question no 2, 3, 4 & 5 - Attempt any two questions.
- 3) Assume $E = 2.4 \times 10^5$ MPa.
- 4) Use of non-programmable calculator is allowed.
- 5) Assume additional data and draw sketches wherever necessary and specify the same.

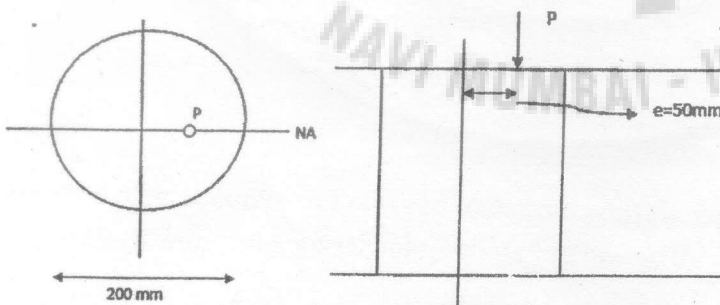
Q1) Attempt any four (20M)

- i. Explain slope and deflection of any two cases of beam with standard loadings.
- ii. Write short note on initial and final setting time of cement
- iii. Explain different types of loading pattern on a column section.
- iv. What is shear & bending stress, explain it detail with the help of an example load.
- v. What is Simple Bending Theory, "write its assumptions and importance.

Q2) Calculate bending stress of symmetrical L section as shown, for simply supported beam carrying udl of 5 kN/m over the span of 5m (15M)



Q3) Compute direct and bending stresses for short column of height 3m uniaxially eccentric loaded as shown. (15M)



Q4) Calculate deflection and slope for cantilever beam of 3m span carrying point load of 5 kN at free end of hollow rectangular section of 300mm x 500 mm and thickness 50 mm (15M)

Q5) Explain in detail density, water absorption and compressive strength test on bricks (15M)



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SECOND YEAR B.ARCH - SEM 3 ATKT EXAMINATION APRIL 2022

Subject - Architectural Building Services

Max Marks - 50

Date - 20/04/2022

Duration - 2hrs.

- Read questions carefully and write down with neat drawn sketches.
- Proper sketches will carry more weightage of marks.
- Answer according to the marks allotted.
- Q.7 and Q.8 is compulsory, Attempt any 4 out of remaining.

Q.1. With the help of graphical representation explain the water distribution system from natural source to taps of the building.

(8M)

Q.2. What are the different sources of water, classify on the basis of surface and subsurface sources?

(8M)

Q.3. With the help of proportionate sketches explain any 2 types of water distribution system.

(8M)

Q.4. With the help of diagram explain what is a ferrule connection in detail.

(8M)

Q.5. Draw a plan of common toilet and bathroom considering size of 1.5m x 2.4m, show all the sanitary fittings with water supply plumbing system.

(8M)

Q.6. Calculate the size of UGT for a family of 8 members and draw a detail cross section of the same.

(8M)

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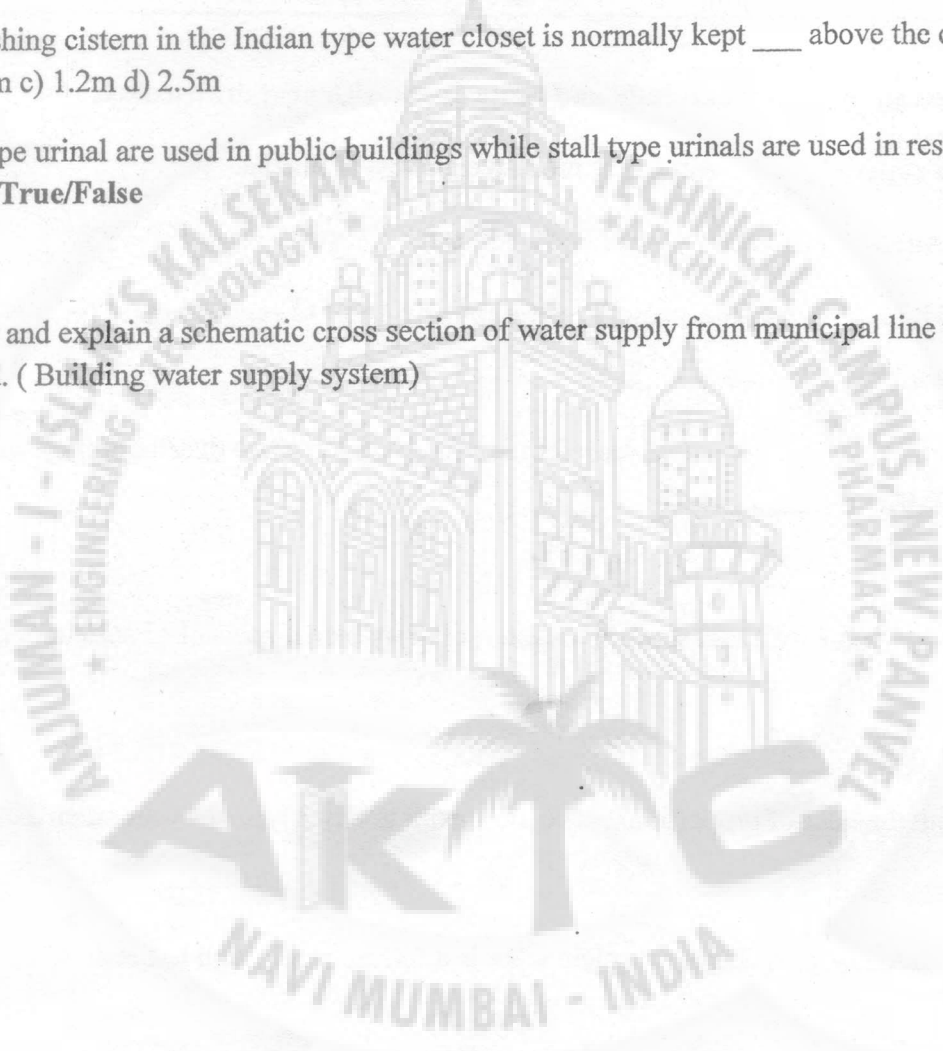
Q.7. Answer the following question

1. A good water distribution system should be capable of supplying the requisite amount of water during fire fighting. **True/False**
2. What is the per head per day water consumption in a Public sector?
a) 150 LPCD b) 105 LPCD c) 135 LPCD d) 175 LPCD
3. The flushing cistern in the Indian type water closet is normally kept ____ above the closet.
a) 2m b) 3m c) 1.2m d) 2.5m
4. Bowl type urinal are used in public buildings while stall type urinals are used in residential buildings. **True/False**

(8M)

Q.8. Draw and explain a schematic cross section of water supply from municipal line to individual house hold. (Building water supply system)

(10M)





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B.ARCH. SECOND YEAR- SEMESTER III (APRIL 2020-22 ATKT EXAM)

SUBJECT: Humanities

Duration: 2 hours

TOTAL MARKS: 50

Date:19/04/2022

Notes:

- All questions are compulsory.
- Numbers on the right hand side indicate marks for each question.
- Support all answers with neat sketches.

Q1. Describe in detail Kandhariya Mahadev temple & Khajuraho temple complex.

Elaborate on components of temples.

(10 M)

Q.2. Sketch the illustration from the book Hindu & Buddhist Architecture by Satish Grover.

(10 M)

Q.3 . Explain & elaborate on any one.

(10 M)

- Shahjahanabad
- Amer Fort Palace & Hawa Mahal
- Vijayanagara Empire.
- Sanchi Complex.

Q.4. Explain & elaborate on any four.

- Bhaja Caves.

(5 M)

- Kath-Kuni style of architecture

(5 M)

- Shore temple at Mahabalipuram.

(5 M)

- sultanates & empire of Delhi.

(5 M)

- Six sacred world religions .

(5 M)

