



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. FIRST YEAR- SEMESTER I -ATKT APRIL 2018

SUBJECT: Architectural Building Construction & Materials.

DURATION: 3 hours

TOTAL MARKS: 70

Date: 23/04/2018

Notes:

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

Q.1 Draft a Plan, Elevation and Isometric of 1-1/2 brick thick wall. (10mks)

Header Bond OR Stretcher bond.

Q.2. Sketch The Following (ANY 5) (10 mks)

- 2.1. King Closer.
- 2.2. Queen Closer.
- 2.3. Half Bat.
- 2.4. Bevelled Closer.
- 2.5. Three Quarter Bat.
- 2.6. Mitred Closer.

Q.3. EXPLAIN WITH SKETCHES what are Load bearing structure and Framed structures? (05mks)

OR

State the **Advantages and Disadvantages** of the
Load bearing structure and Framed structures

(05mks)

Q.4. Draw and Label Elements of the structure (Roof, Flooring, Foundation) of ANY 1 of the below (10 mks)

MUD BRICKS STRUCTURE.
STONE STRUCTURE.
R.C.C. STRUCTURE.
STEEL STRUCTURE.
TIMBER STRUCTURE.

PLEASE TURN OVER.....

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Q.5. What is a Superstructure and Substructure? (05 mks)

Q.6. State the Advantages of Brick Construction over Stone Construction (05mks)

AND

Advantages of Steel Construction over R.C.C Structure (05mks)

Q.7. Draw a sketch of a Standard Brick with Dimensions and label the following (05mks)

- 7.1. Stretcher face.
- 7.2. Header face.
- 7.3. Frog.
- 7.4. Bed.
- 7.5. Arris.

AND

Explain Properties of Good bricks and Classes of the same. (05mks)

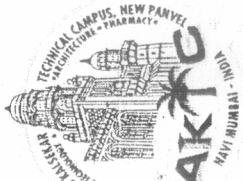
Q.8. Sketch Joineries OF the MENTIONED TOPICS (05mks)

Foundation to Column
Column to beam

AND

Sketch Any 3 Timber Joineries. (05mks)

-----XXXXXXXXX THR END XXXXXXXXXXXXXXXXXXXX-----



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FIRST YEAR B. ARCH- SEMESTER I EXAMINATION APRIL 2018.

SUBJECT: Theory and Design of Structures I.

Duration: 2 hours

TOTAL MARKS: 50

Date: 24/4/2018

Notes:

- 1) Question no 1 is compulsory, attempt any 3 questions from the remaining 4 questions.
- 2) Figures to the right indicate full marks.
- 3) Assume suitable additional data, if necessary and state clearly the same.
- 4) Use of non-programmable scientific calculator is permitted.

Q.1. Attempt any 4.

[20]

- a) Explain the importance of the subject of Theory and Design of Structures, for Architecture Students.
- b) Draw and explain the different types of supports for Beams.
- c) Explain with a sketch the different elements of a G+2 building.
- d) Differentiate between Load Bearing and Framed Structures.
- e) Define Force. Write its SI unit. What are its different types.

Q.2. a) State and explain with Sketches the Triangle and Polygon Law of Forces [5]

b) Find the Magnitude of 2 forces, such that, if they act at right angles, the Resultant is 50N and if they act at 60° , the Resultant is 80N. [6]

Q.3. a) State and Explain Lami's Theorem. [4]

b) A sphere weighing 30 kN is suspended by a rope as shown in Fig.1. Calculate the Support Reactions and Tension in the Rope. [6]

Q.4 a) Find the Support Reactions of the Beam shown in Fig.2. [5]

b) What are the characteristics and effects of Force. [5]

Q.5. Find the support Reactions of the Simply supported beam shown below, in Fig 3. [10]

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P.T.O 1/2

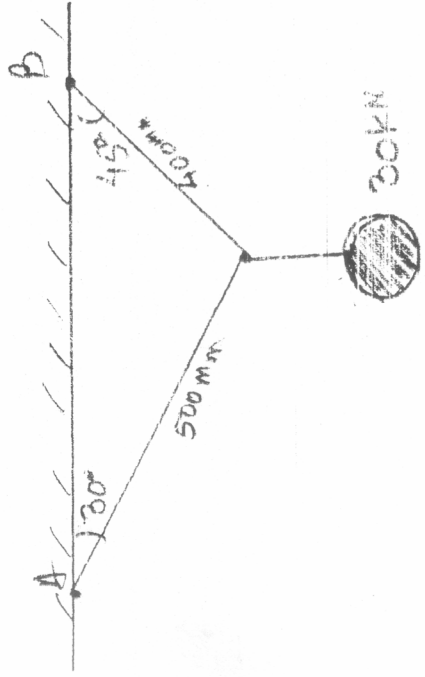


Fig. 1 (Q. 3 b)

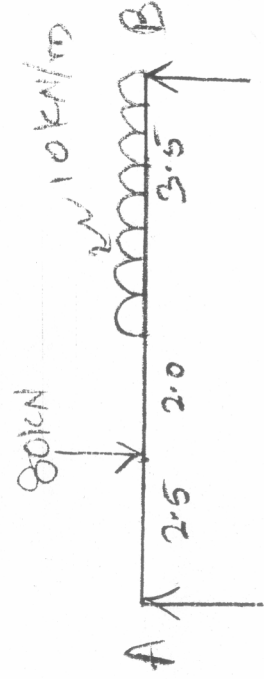


Fig. 2 (Q. 4 a)

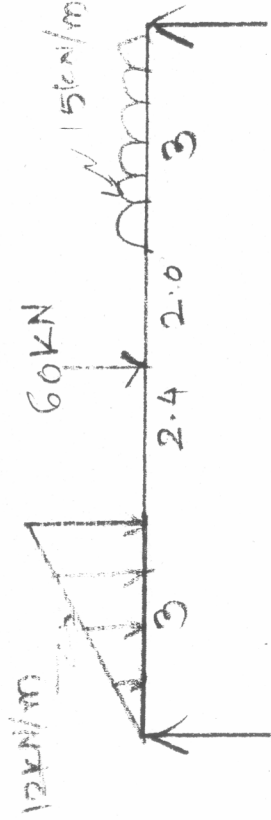


Fig. 3 Q. 5